



Office of the National Coordinator
for Health Information Technology

Leveraging Prescription Drug Monitoring Programs and Health Information Technology for Addressing Substance Use Disorder and Opioid Use Disorder (LPASO)

A Landscape Assessment of Prescription Drug Monitoring Programs and Health Information Technology Indicators

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Foreword

Leveraging Prescription Drug Monitoring Programs and Health Information Technology for Addressing Substance Use Disorder and Opioid Use Disorder (LPASO)

A Landscape Assessment of Prescription Drug Monitoring Programs and Health Information Technology Indicators

The federal government, including the U.S. Department of Health and Human Services (HHS) is combating the opioid crisis through the provision of resources to states, health care providers, and other relevant stakeholders to assist their efforts to address the crisis. While there is critical attention focused on the COVID-19 public health epidemic at present, the opioid crisis remains in full force and HHS continues to prioritize and invest in critical programs to prevent and treat substance use disorder ([SUD](#)). Though the activities and analysis involved in producing this report took place from 2018 to 2020, we believe it remains valuable for states and other stakeholders that are considering strategies for improving their policies and approaches with technology for SUD prevention and treatment.

For years¹, the Office of the National Coordinator for Health Information Technology (ONC) within HHS has engaged in collaborative work to understand the role of health information technology (health IT) in addressing the opioid crisis, including the opportunities created by state systems known as Prescription Drug Monitoring Programs (PDMPs). This report examines ways that PDMP policies and technology can support substance and opioid misuse identification, prevention, and treatment. It is intended for a wide audience including but not limited to policy makers, implementers, providers, and health IT developers, and is well poised to inform state activities at this critical time for individuals and communities impacted by both the public health COVID-19 and opioid epidemics.

In addition to this report, we encourage readers to explore the [toolkit](#) we funded related to this report entitled: *State Strategies to Improve the Use of Prescription Drug Monitoring Programs to Address Opioid and Other Substance Use Disorders*. The toolkit provides practical information to support the successful implementation and use of health IT and PDMPs in practice, aligned in part with the findings outlined in this report.

Our hope is for this practical information to help minimize any loss in our nation's progress for combating the opioid crisis as a result of the Covid crisis; in this respect, the finding and recommendations could not be timelier and we thank all of our contributors who helped make this possible.

¹ https://www.healthit.gov/sites/default/files/facas/HITSC_PDMP_SI_V2_JJL_2014-12-10.pdf





Table of Contents

A Landscape Assessment of Prescription Drug Monitoring Programs and Health Information Technology Indicators	1
Authorship and Acknowledgements	2
Foreword.....	4
Executive Summary	8
Introduction.....	8
PDMP and Health IT Indicators	8
Key Findings.....	9
Introduction	10
Background and overall goal of LPASO project.....	10
Data Gathering Approach and Landscape Assessment Methodology.....	11
Limitations	11
PDMP Indicators	12
PDMP Indicator Criteria Development	12
PDMP Indicator Application	12
PDMP Indicator: PDMP Data Placement in Health IT Systems.....	13
PDMP Indicator: Interpretation of PDMP Data	17
pdmp indicator: PDMP Access Roles	18
pdmp indicator: PDMP Hospital Integration	21
pdmp indicator: Standards and Hubs used for PDMP Data Capture, Exchange, and Reporting.....	23
<i>PDMP Interstate Data Sharing.....</i>	<i>27</i>
PDMP Indicator Conclusion.....	29
Health IT Indicator.....	30
Health IT Indicator Criteria Development.....	30
Health IT Indicator Application.....	30
Health IT Indicator: Electronically Prescribing for Controlled Substances (EPCS)	31
Considerations on Telehealth for MAT.....	32
<i>Vermont's Hub-and-Spoke Model.....</i>	<i>35</i>
<i>UNM's Project ECHO</i>	<i>36</i>





Health IT Indicator Conclusion.....	36
Key Findings and Emerging Themes	37
Appendix A: States and Territories with Operational PDMPs	39
Appendix B: Data Placement	40
Appendix C: PDMP Integration	42
Appendix D: Data Access, Use or Disclosure.....	44
Appendix E: Key PDMP-Related Statutes, Regulations, and Bills	45
Appendix F: Glossary of Terms.....	60
Appendix G: Glossary of Acronyms.....	63





List of Tables

Table 1. PDMP Indicators Selection Criteria	12
Table 2. PDMP Indicators Selected.....	13
Table 3. Number of PDMP Access Roles by State and Territory	19
Table 4. State Variation in PDMP Access Roles	20
Table 5. Behavioral Health (Non-Prescriber) Access Roles.....	21
Table 6. Non-Prescriber Access Roles in Relation to Opioid Overdoses.....	21
Table 7. Health IT Indicator Selection Criteria	30
Table 8. Health IT Indicator Selected	31
Table 9. Glossary of Terms	60
Table 10. Glossary of Acronyms	63

List of Figures

Figure 1. States with Statutory/Regulatory Language Allowing Placement of PDMP Data within the Medical Record.....	15
Figure 2. States with Statutory/Regulatory Language Allowing Integration without Explicit Language Regarding Data Placement.	16
Figure 3. States with Statutory/Regulatory Language Allowing Health Care Policies to Govern Disclosure of PDMP Data in the Medical Record.	17
Figure 4. PDMP Integration Status of Hospitals.	22
Figure 5. Nationwide Status of PDMP Integration in Hospitals.	23
Figure 6. Data Exchange Standards Involved in PDMP and Health IT Integration.....	24
Figure 7. The Entity Managing the PDMP Processor by State.	26
Figure 8. The Entity Operating the PDMP for Each State.....	26
Figure 9. States Using the PMP Gateway PDMP/EHR Integration Solution.	27
Figure 10. State Connections to PMP InterConnect for Interstate Data Sharing.....	28
Figure 11. State Connections to RxCheck for Interstate Data Sharing.....	29
Figure 12. States with Mandatory EPCS Legislation.	32
Figure 13. States and Territories with Operational PDMPs.....	39





Executive Summary

INTRODUCTION

Prescription drug monitoring programs (PDMPs) and health information technology (health IT) solutions are utilized across the United States to combat the opioid overdose epidemic. PDMP and health IT offer critical tools to support the identification, prevention, and treatment of substance use disorder (SUD) and opioid use disorder (OUD). The Office of the National Coordinator for Health Information Technology (ONC) established the Leveraging PDMPs and Health IT for Addressing SUD/OUD (LPASO) project to examine policy and technical efforts related to PDMPs, health IT, and the opioid epidemic. This landscape assessment is one part of the LPASO project. It presents information on the current state of PDMP and health IT activities nationwide, that can support policymakers, health care providers, and other relevant stakeholders considering ways for enhancing health IT supported solutions for the prevention and treatment of OUD. The results of this landscape assessment represent a compilation and analysis of data gathered from mainly secondary data sources. When secondary sources were not available, state specific laws and regulations were analyzed and referenced. It should also be noted that some of the information in this landscape assessment (e.g., regulations, statutory language, statistics) may have been updated after publication. Efforts were made to ensure that the most accurate and up-to-date information was provided as part of this report.

PDMP AND HEALTH IT INDICATORS

For this landscape assessment, ONC was most interested in indicators associated with how PDMPs and health IT may be improving health outcomes for the opioid overdose epidemic. To narrow and select which indicators would be analyzed, a Technical Expert Panel (TEP), convened by the National Quality Forum, oversaw a review of measures and concepts related to medical opioid use. ONC then established criteria for both PDMPs and health IT indicators. The PDMP and health IT indicators chosen for inclusion in the landscape assessment represent those that best met the criteria discussed in the report, such as current activities employed across the nation to address SUD/OUD.

The PDMP indicators included in this analysis were:

- PDMP data placement in health IT systems;
- Interpretation of PDMP data;
- PDMP access roles;
- PDMP hospital integration; and
- Data standards and hubs used for PDMP data capture, exchange, and reporting.

The health IT indicator included in this analysis was:

- Electronic prescribing for controlled substances (EPCS).

Additionally, there are considerations for states around telehealth for medication-assisted treatment (MAT).





KEY FINDINGS

The PDMP indicator review revealed that there are ambiguous or non-existent policies regarding PDMP data placement in health IT systems, interpretation of PDMP data, and PDMP access roles. Less than half of hospitals reported integration of PDMP checks within their electronic health record (EHR) workflows. In addition, the variability of tools used to exchange, store, and report PDMP data contributed to the complexity of PDMP ecosystems.

The health IT indicator review revealed that there are limited adoption rates of EPCS. Also, telehealth for MAT was not an indicator assessed as part of the landscape assessment, however, it is discussed below as there are considerations outlined for states around the use of MAT.





Introduction

BACKGROUND AND OVERALL GOAL OF LPASO PROJECT

In response to the growing opioid epidemic, the Commission on Combating Drug Addiction and the Opioid Crisis (Commission) was established in 2017² to develop recommendations to address the opioid epidemic, which was declared a national public health emergency under federal law on October 26, 2017. On November 1, 2017, the Commission released a [final report](#) with 56 recommendations that fell broadly into nine categories.³ Those categories focused on reducing barriers and supporting programs and innovations aimed at strengthening federal, state, and local responses to the opioid overdose epidemic. Several of the report's recommendations include the use of prescription drug monitoring programs (PDMPs), state run programs, and health information technology (health IT) as a means to address substance use disorder (SUD) and opioid use disorder (OUD).

The Leveraging PDMPs and Health IT for Addressing SUD/OUD (LPASO) project was created with consideration of the Commission's final report, and also from the findings and recommendations from a previous ONC project, the "Enhancing Access to PDMPs Using Health IT" project. In 2012, ONC, in collaboration with the Substance Abuse and Mental Health Services Administration (SAMHSA), contracted with the MITRE Corporation to identify ways to leverage health IT to improve access to PDMPs. The collaborative project resulted in the development of the "Enhancing Access to Prescription Drug Monitoring Programs Using Health Information Technology: Work Group Recommendations Report" and 13 pilots to test the feasibility of connecting PDMPs with health IT systems.⁴

Additionally, bipartisan legislation aimed at curbing the opioid crisis—the 21st Century Cures Act (Cures Act) of 2015, and the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (SUPPORT Act) of 2018—includes provisions considered as part of this project.^{5,6}

ONC established the LPASO project to examine how states, the District of Columbia, and territories utilize PDMPs and health IT to support SUD/OUD identification, prevention, and treatment.⁷ Specifically, ONC was interested in identifying and describing the policy and technical approaches to addressing the opioid overdose epidemic related to:

2 The White House. (2017). <https://www.whitehouse.gov/presidential-actions/president-donald-j-trump-signs-executive-order-establishing-presidents-commission-combating-drug-addiction-opioid-crisis/>

3 The Commission on Combating Drug Addiction and the Opioid Crisis. (2017).

https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Final_Report_Draft_11-15-2017.pdf

4 Enhancing Access to Prescription Drug Monitoring Programs Using Health Information Technology. (2012).

https://www.healthit.gov/sites/default/files/work_group_document_integrated_paper_final_0.pdf

5 21st Century Cures Act. (2016). <https://www.govinfo.gov/content/pkg/PLAW-114publ255/pdf/PLAW-114publ255.pdf>

6 Substance Use–Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act. (2018).

<https://www.congress.gov/bill/115th-congress/house-bill/6/text>

7 For purposes of this landscape assessment document, "state" means a U.S. state, the District of Columbia, or a U.S. territory.





- **PDMPs:** electronic databases that track controlled substance prescriptions in states (Appendix A);⁸ and
- **Health IT:** the application of information processing involving both computer hardware and software that deals with the placement, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making.⁹

DATA GATHERING APPROACH AND LANDSCAPE ASSESSMENT METHODOLOGY

The landscape assessment identifies key indicators related to PDMPs and health IT through a nationwide analysis of those indicators, that were reviewed by a TEP. This analysis is intended to inform federal and state policymakers and SUD/ODU stakeholders on the status of these key PDMP and health IT indicators across states. Due to the extensive scope of this project and limited resources, the data gathering approach for this landscape assessment was completed using mainly secondary data sources. When secondary sources were not available, state specific laws and regulations were analyzed and referenced.

The methodology employed for conducting the landscape assessment consisted of the following steps:

1. Develop criteria to select potential PDMP and health IT indicators based on the LPASO project goal;
2. Apply the criteria to potential PDMP and health IT indicators;
3. Select the indicators that most closely aligned with the criteria; and
4. Examine selected indicators via a nationwide analysis.

LIMITATIONS

Limitations in conducting this landscape assessment included:

- Lack of publicly available secondary data sources;
- Secondary sources that do not include a comprehensive nationwide view (e.g., one secondary source of information contains information for only five states);
- Evolving policy and technical landscape (e.g., states continually updating policies in response to their SUD/ODU strategies); and
- Discrepancies in data due to the timeframes in which sources were published, interpretation of data collected, and inconsistent definitions.

8 Centers for Disease Control and Prevention. (2019). <https://www.cdc.gov/drugoverdose/pdmp/states.html>

9 The Office of the National Coordinator for Health Information Technology. (2019). <https://www.healthit.gov/topic/health-it-basics/glossary>





PDMP Indicators

This portion of the landscape assessment describes the PDMP indicators that point to improved outcomes for the opioid crisis, including prevention, treatment, and recovery activities. It then reviews the data that was readily available on each indicator.

PDMP INDICATOR CRITERIA DEVELOPMENT

The PDMP portion of the landscape assessment examined the role of PDMPs in the identification, prevention, and treatment of SUD/OD. This assessment reviewed PDMP programs, laws, regulations, and policies across the nation. While all 50 states, the District of Columbia, and two territories (Guam and Puerto Rico) have operational PDMPs within their borders, the organization and operation of PDMPs varies among states.¹⁰ Additionally, each state applies varying policies with regard to PDMP data access, storage, and disclosure. Table 1 outlines the criteria used to select potential PDMP indicators contained in the landscape assessment. The criteria were informed by subject matter experts from the field.

Table 1. PDMP Indicators Selection Criteria

PDMP Indicator Selection Criteria	Definition
Comprehensiveness	The relevant information was available for all states.
Availability of data from secondary sources	Information could be located through secondary sources or state specific laws and regulations.
Reliability	The data came from established sources.
Sustainability	Indicators were widely supported by federal priorities, policies, initiatives, and general industry use.
Impact	Indicators were evaluated based on their impact to care, treatment, and provider usage along the care continuum.
Relevance to prevention and treatment policy and practice	Indicators were evaluated based on whether they were part of or impacted by current policies.

PDMP INDICATOR APPLICATION

The TEP in collaboration with ONC evaluated potential PDMP indicators based on the methodology outlined above. From that evaluation, ONC selected a core set of indicators for the landscape assessment. The PDMP indicators that were selected are outlined and defined in Table 2.

¹⁰ Prescription Drug Monitoring Program Training and Technical Assistance Center. (2019). http://www.pdmpassist.org/pdf/PDMP_Program_Status_20180801.pdf





Table 2. PDMP Indicators Selected

PDMP Indicator	Definition
PDMP data placement in health IT systems	State statutes and policies that allow PDMP data to be stored in another system such as the EHR (e.g., included in provider notes, medication history, etc.) as compared to a one-time view of the PDMP data.
Interpretation of PDMP data	State statutes and policies related to the use of PDMP data for predictive analytics such as risk scores.
PDMP access roles	Categories of professionals who are authorized by state statute or other policies to access PDMP data.
PDMP hospital integration	Prevalence of PDMP integration within the clinical workflow. This indicator examined whether hospitals provided access to the PDMP within the hospital's EHR system or outside of the hospital's EHR system via a PDMP portal or secure website.
Data standards and hubs used for PDMP data capture, exchange, and reporting	Health IT components and data standards in use for the transport, interpretation, and integration of PDMP data including those used for interstate data sharing.

PDMP INDICATOR: PDMP DATA PLACEMENT IN HEALTH IT SYSTEMS

The PDMP data placement in health IT systems indicator examines state policies for storage of PDMP data once a query is made to the PDMP and the respective data is returned. Some states allow a practitioner to place the PDMP data in a medical record.¹¹ In contrast, some states permit practitioners to view only PDMP data or reports within the health IT system through a link to the PDMP portal that displays a snapshot view.

Depending on state requirements, PDMPs contain varying amounts of sensitive patient information such as patient and provider demographics, prescription data (ranging from specific schedules of controlled substances to all prescriptions), and prescription fill details. PDMP data helps inform prescribing and other patient care decisions made by clinicians (e.g., the decision to refer a patient to a SUD treatment specialist or pain management specialist). Professionals identified by PDMP access roles (e.g., physicians, pharmacists, nurse practitioners, or their delegates) can view PDMP information via a secure sign-on to a standalone PDMP portal/website or through an integrated feed into an EHR system or a pharmacy dispensing system.

PDMP data placed within the medical record allows clinicians to more efficiently conduct medication reconciliation to compare all medication orders to all medications a patient is taking. A provider can also substantiate clinical decisions from a previous patient visit, such as prescribing a controlled substance or referring a patient to SUD/ODU treatment. Members of a patient's care team who are permitted access under state law to the PDMP data can review the PDMP data in the medical record to better coordinate

¹¹ A medical record is a single source record of clinical information (e.g., single office or hospital record) and a health record is a multi-source record from all clinicians involved in a patient's care. For the landscape assessment, medical record and health record are referred to as a medical record. (<https://www.healthit.gov/faq/what-are-differences-between-electronic-medical-records-electronic-health-records-and-personal>)





care. In states that allow access by medical directors and coordinators who oversee care team members, the medical directors and coordinators can use the PDMP data in the medical record for better assessment of prescribing practices. A more thorough assessment can assist a facility's adoption of prescribing guidelines and best practices.

While PDMP data placed within the medical record can provide benefits, it can also lead to challenges. This includes potential duplication of prescription history in the medical record and concerns around access and re-disclosure requirements once the PDMP data is placed in the record. The laws and policies that govern PDMP data are sometimes different (and often more stringent) than those that govern patient health data in the medical record. These differences include, for instance, who is allowed to access the PDMP data, the purpose for which it is accessed, and what can be done with the data. When accessing and disclosing PDMP data stored in the medical record, providers who are covered entities have to comply with the HIPAA access and disclosure requirements. Part 2 Programs prohibit disclosure of information that would identify a person who has or has had a SUD without their written consent. In circumstances where the state PDMP access and disclosure requirements are more stringent than the access and disclosure requirements under HIPAA, the state requirements may also apply to the PDMP data stored in the medical record. The more stringent requirements are deemed to be more protective of privacy and therefore have not been superseded by HIPAA. Where a state mandates compliance with the more stringent PDMP access and disclosure requirements, the provider has to satisfy both federal and state access and disclosure requirements for PDMP data stored in the medical record.

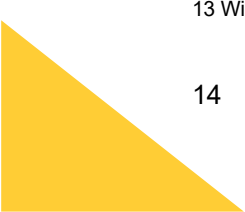
In response to the challenge of tracking who has requested PDMP data via a health IT system, some states have developed regulatory guidance regarding audit logs that identify specific requesters and the times that they queried the PDMP.¹² Regulatory officials use the logs to substantiate compliance in accessing PDMP reports via a health IT system. A nationwide analysis of audit log regulations was beyond the scope of this project. However, at least one state allows practitioners to access audit logs to review and confirm the accuracy of their query history.¹³

Analysis of PDMP laws and regulations indicates that 18 states (see Figure 1) have language that can allow, depending on legal interpretation, placement of PDMP data in a medical record. These states are: Arizona, California, Colorado, Georgia, Indiana, Kentucky, Louisiana, Massachusetts, Mississippi, New Hampshire, New Jersey, Ohio, Oklahoma, Tennessee, Texas, Virginia, Washington, and West Virginia (see [Appendix B](#)). Florida recently proposed a rule that would allow such PDMP data placement in a medical record (see [Appendix B](#)). States sometimes specify the location within the medical record where the PDMP data must reside. For example, Massachusetts only allows practitioners to retain PDMP data in the medical record as a clinical note associated with a clinical encounter (see [Appendix B](#)).

A review of PDMP laws and regulations found that 14 states at time of survey (see Figure 2) had statutory or regulatory language (see [Appendix C](#)) that authorizes PDMP data integration, which allows for collection of data from multiple sources, or PDMP interoperability, exchange of information with health IT systems, but that the laws and regulations remain silent about the placement of the data within the systems. These states are: Delaware, Illinois, Iowa, Maryland, Nebraska, Nevada, North Carolina,

12 Chesapeake Regional Information System for our Patients. (2018). <https://crisphealth.org/wp-content/uploads/2018/06/Understanding-PDMP-and-Where-You-Fit-In-QA.pdf>

13 Wis. Admin. Code CSB § 4.093





Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Utah, and Wisconsin. Legal interpretation of the language in these states' statutes is required to determine if clinicians can place PDMP data in the medical record.

States that allow placement of PDMP data in a medical record must decide whether PDMP or other patient health care requirements apply to the access, use, or disclosure of the retained data. Policies vary among states, and PDMP data retained in the medical record may not be governed by health care policies that apply to the medical record itself. Seven states—California, Colorado, Kentucky, New Jersey, Tennessee, Texas, and Washington—have adopted PDMP policies (see [Appendix D](#)) that apply the same access, use, or disclosure rules to both the retained PDMP data and the other patient health information in the medical record (see Figure 3).

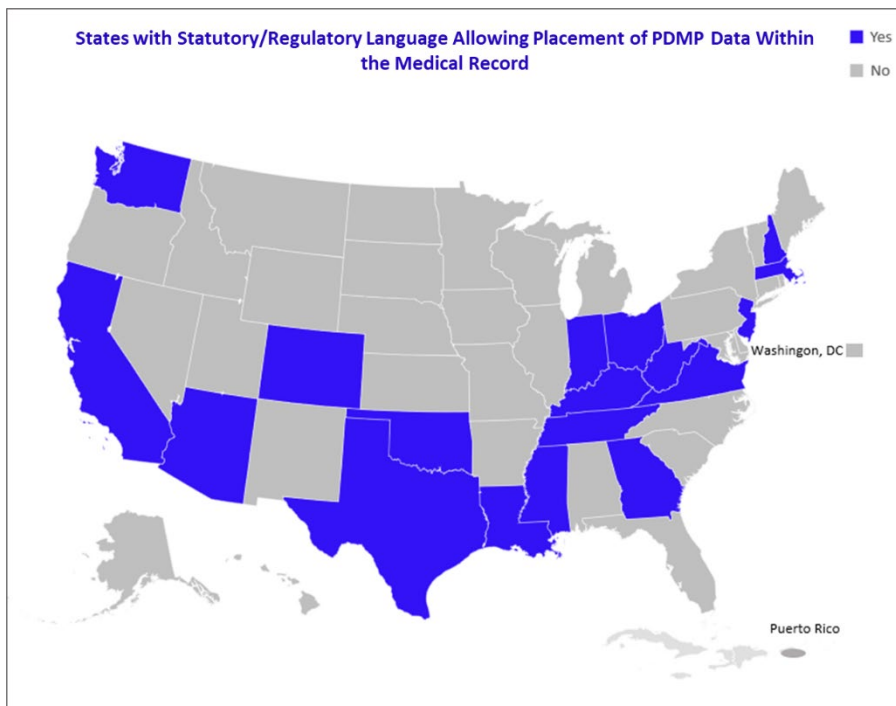


Figure 1. States (n=18) with Statutory/Regulatory Language Allowing Placement of PDMP Data within the Medical Record (see Appendix B for a list of state statutory/regulatory language).¹⁴

¹⁴ Guam has a PDMP, however, there is no statutory/regulatory language allowing placement of PDMP data within the medical record. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands do not have PDMPs, and therefore are not included. The state of Missouri does not have a statewide PDMP, but [St. Louis County in Missouri has a PDMP](#) that is used by 72 jurisdictions in the state to cover 84 percent of the population.



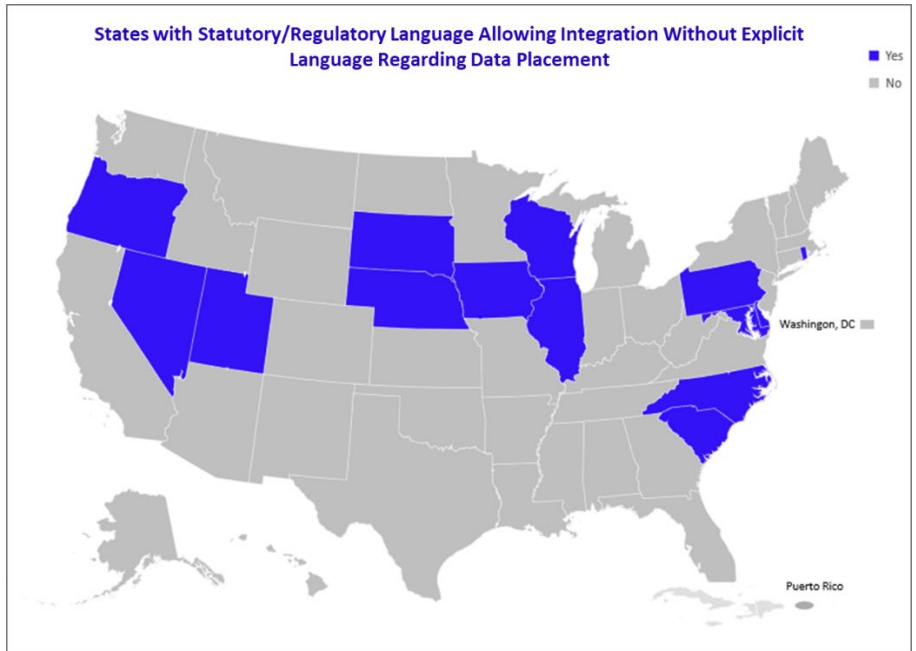


Figure 2. States (n=14) with Statutory/Regulatory Language Allowing Integration without Explicit Language Regarding Data Placement (see Appendix C for state statutory/regulatory language).¹⁵

¹⁵ Guam has a PDMP, however, there is no statutory/regulatory language allowing placement of PDMP data within the medical record. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands do not have PDMPs and therefore are not included.



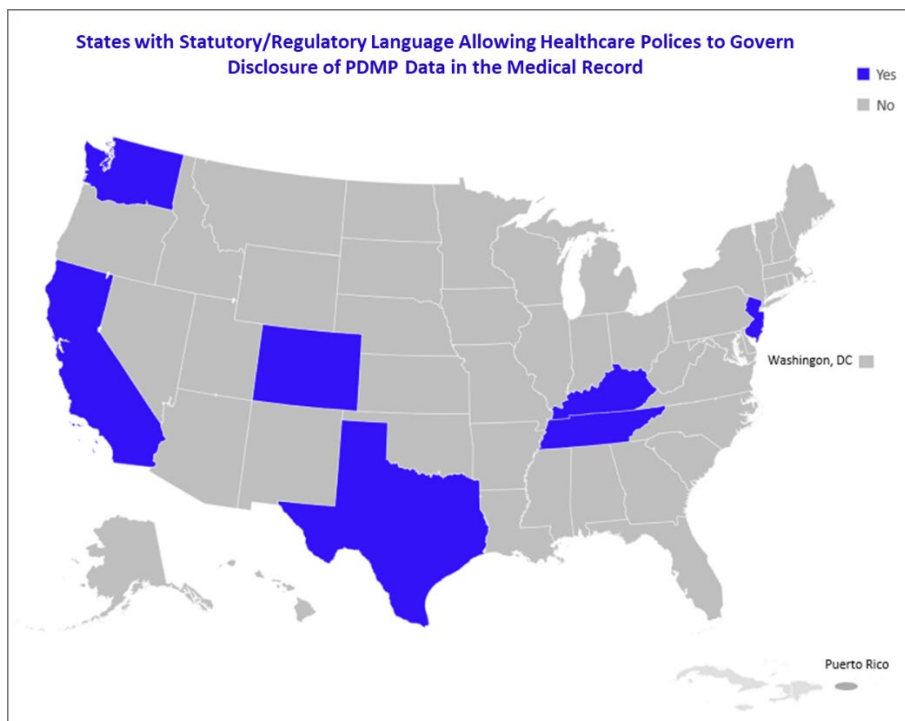


Figure 3. States (n=7) with Statutory/Regulatory Language Allowing Health Care Policies to Govern Disclosure of PDMP Data in the Medical Record (see Appendix D for state statutory/regulatory language).¹⁶

PDMP INDICATOR: INTERPRETATION OF PDMP DATA

PDMP data provides a comprehensive picture of a patient’s prescription history and may help identify patients at risk for misuse of controlled substances. To increase the use of the PDMP data by clinicians, 44 states mandate PDMP queries for prescribers, in certain circumstances, such as prior to prescribing an opioid.¹⁷ Of these states, 19 also mandate queries for dispensers.¹⁸

As mandatory use provisions increase utilization of PDMPs by clinicians, tools and resources are needed to help make the PDMP data more actionable. In response to this need, some entities have employed an additional layer of analytics, risk scoring, or clinical decision support (CDS) tools to supplement raw PDMP data to ease interpretation and support clinical decision-making.¹⁹ To supplement direct data feeds available from PDMPs, some clinicians utilize CDS to view guideline-based treatment recommendations. Other options include calculations of morphine milligram equivalents (MMEs)—a standardized measure

16 Guam has a PDMP, however, there is no statutory/regulatory language allowing placement of PDMP data within the medical record. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands do not have PDMPs and therefore are not included.

17 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). http://www.pdmpassist.org/pdf/Mandatory_Query_20181120.pdf

18 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). http://www.pdmpassist.org/pdf/Mandatory_Query_20181120.pdf

19 Minnesota Prescription Drug Monitoring Program. (2016). <http://pmp.pharmacy.state.mn.us/assets/files/NARxCHECK-Score-as-a-Predictor1.pdf>





that can help assess dose-related risk of overdose—and other risk scores to assist clinicians in treatment decisions.

A review of PDMP statutes and regulations revealed that no state (see [Appendix E](#)) has statutory or regulatory language banning or prohibiting the development or use of interpretations of PDMP data such as risk scores. However, some have expressed concern that providing these analytics tools might dissuade clinicians from examining patient PDMP profiles in detail, which may have a significant impact on patient care. The use of PDMP data interpretations (e.g., risk scores) can present other challenges. The threshold values for risk scores vary widely among states, with states reporting different thresholds for multiple provider episodes and MME calculations. Additionally, the vendors developing these proprietary analytics tools are oftentimes unwilling to disclose the risk calculation algorithms.²⁰ This may lead to the inability of states to assess whether the interpretations accurately reflect the source data provided by the PDMP.

According to the National Alliance for Model State Drug Laws (NAMSDL), some states are beginning to issue legal opinions on the subject of PDMP data interpretation stating that reviews of these risk scores (i.e., without additional review of a patient's raw PDMP information) do not constitute compliance with mandated PDMP use provisions.²¹ Compliance requires review of patients' raw PDMP data as presented within the PDMP profile itself. These states do allow use of CDS data interpretation tools as secondary sources of information that complement, but do not replace the original PDMP data or reports.

PDMP INDICATOR: PDMP ACCESS ROLES

State laws and regulations determine the categories of users who are authorized to access and use a state's PDMP data. Some categories of users such as "prescribers of controlled substances" include multiple professional roles that would be allowed access to PDMP data. Under this category, health care professional roles that generally have legal access to this data include physicians, physician assistants, advanced practice registered nurses, dentists, and podiatrists.

There is considerable variability in the number and types of access roles identified in each state. The number of access roles by state ranges from 8 – 25, with an average of 16 access roles per state. Puerto Rico (8) and Nebraska (9) have the lowest number of roles able to access PDMP data, and Wisconsin (25), Illinois (24), and Mississippi (24) have the highest number of roles able to access PDMP data (see Table 3).²²

20The PEW Charitable Trusts. (2019). <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2018/05/improvements-to-prescription-drug-monitoring-programs-can-inform-prescribing>

21 Survey Results, PDMP/PMP Resource Group, National Alliance for Model State Drug Laws (NAMSDL), September 18, 2018 email from Chad Zadrazil, Director, Research and Legislative Affairs, NAMSDL

22 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). <http://www.pdmpassist.org/content/state-profiles>





Table 3. Number of PDMP Access Roles by State and Territory

State	Number of PDMP Access Roles	State	Number of PDMP Access Roles	State	Number of PDMP Access Roles
Alabama	12	Minnesota	13	Vermont	15
Alaska	19	Mississippi	24	Virginia	17
Arizona	17	Missouri (St. Louis County)	12	Washington	19
Arkansas	15	Montana	21	West Virginia	14
California	14	Nebraska	9	Wisconsin	25
Colorado	14	Nevada	13	Wyoming	16
Connecticut	11	New Hampshire	14	District of Columbia	23
Delaware	19	New Jersey	16	Guam	15
Florida	18	New Mexico	17	Puerto Rico	8
Georgia	15	New York	21		
Hawaii	13	North Carolina	12		
Idaho	19	North Dakota	23		
Illinois	24	Ohio	22		
Indiana	20	Oklahoma	21		
Iowa	16	Oregon	15		
Kansas	15	Pennsylvania	15		
Kentucky	17	Rhode Island	16		
Louisiana	19	South Carolina	18		
Maine	19	South Dakota	23		
Maryland	22	Tennessee	20		
Massachusetts	18	Texas	15		
Michigan	21	Utah	23		

Note: Data in Table 3 was obtained from the Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). <http://www.pdmpassist.org/content/state-profiles>

An analysis of the PDMP Training and Technical Assistance Center’s (TTAC) data revealed that there are 63 unique access roles identified across all states.²³ In all states and jurisdictions, prescribers and pharmacists are allowed access to the PDMP.²⁴ A majority of states also allow access for law enforcement, physician assistants, nurse practitioners, and prescriber delegates.²⁵ The access roles implemented by a majority of the states are outlined below in Table 4.

23 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018).

<http://www.pdmpassist.org/content/state-profiles>

24 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018).

<http://www.pdmpassist.org/content/state-profiles>

25 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018).

<http://www.pdmpassist.org/content/state-profiles>





Table 4. State Variation in PDMP Access Roles

PDMP Access Role	Number of States and Territories Allowing Access
Pharmacist	53
Prescriber	53
Law Enforcement	52
Nurse Practitioner	52
Physician Assistant	51
Prescriber Delegate	51
Licensing Board	50
Dispenser Delegate	47
Medical Examiner	45
Patient	42
Medicaid Fraud and Abuse Analyst	33
Medical Resident	33
Other PDMPs	32
Prosecutor	32
Researcher	31

Note: Data in Table 4 was obtained from the Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). <http://www.pdmpassist.org/content/state-profiles>

One challenge regarding this indicator is the lack of harmonized definitions of the various access roles. For example, all 50 states and U.S. jurisdictions allow for prescriber delegates to access the PDMP. A prescriber delegate is defined as, “an individual who acts as an agent, pursuant to the requirements of the state agency to request PDMP data on behalf of the prescriber.”²⁶ However, it is unclear which access roles (e.g., registered nurse, naturopath), fall under this broad definition. Therefore, it is hard to determine the full range of access roles allowed within a state. Additionally, the lack of harmonized definitions creates challenges when it comes to interstate data sharing. Due to the variability, there is often a mismatch of roles and role definitions when trying to enable role-based data sharing across state lines. With this in mind, the [PMIX Healthcare Roles](#) document was developed to provide states with a resource to assist in sharing data using health care user roles.²⁷

Another observation related to this indicator is in regard to state variation in non-prescribing health care professionals’ access to PDMP data. For instance, behavioral health professionals, who play an important role in the identification and/or treatment of SUD/ODU, often do not have access to PDMP data given that they do not have authority to write prescriptions. Additionally, state laws often do not grant

26 National Association of State Controlled Substances Authorities. (2016). <https://www.nascsa.org/nascsaPMP/nascsaPMPmodelAct/NASCsApmmodelAct2016.pdf>
 27 PMIX Healthcare Roles Final. (2019). <http://www.pdmpassist.org/content/current-pmix-standards>





PDMP access to other professionals involved in overdose response such as emergency medical services (EMS) personnel and coroners.

When behavioral health providers have authority to query PDMPs about patients undergoing SUD/ODU treatment, they can monitor if their patients are receiving controlled medications from other prescribers that may interfere with treatment. Behavioral health providers without authority to access PDMP data may be forced to make treatment decisions with limited data. Table 5 summarizes the number of states that grant behavioral health providers without prescribing privileges (i.e., providing non-pharmacological treatment such as cognitive based therapy) with PDMP access.

Table 5. Behavioral Health (Non-Prescriber) Access Roles

PDMP Access Role	Number of States Allowing Access
Drug Treatment Provider	16
Mental Health Therapist	1

Note: Data in Table 5 was obtained from the Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). <http://www.pdmpassist.org/content/state-profiles>

While EMS personnel are often the first to respond to potential overdoses and coroners validate fatal overdoses, a vast majority of these professionals lack access to PDMPs. These access roles are only permitted in the following number of states (see Table 6):

Table 6. Non-Prescriber Access Roles in Relation to Opioid Overdoses

PDMP Access Role	Number of States Allowing Access
Coroner	5
EMS	0

Note: Data in Table 6 was obtained from the Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). <http://www.pdmpassist.org/content/state-profiles>

PDMP INDICATOR: PDMP HOSPITAL INTEGRATION

The PDMP integration in hospitals indicator was measured using data collected from the 2017 American Hospital Association (AHA) Annual Survey IT Supplement.²⁸ PDMP data can be accessed in a variety of ways, including through a web portal or secure website that connects the provider to the PDMP, via a health information exchange (HIE), within the workflow of an EHR, or through other applications utilizing application program interfaces (APIs).²⁹ The PDMP hospital integration indicator examined whether hospitals provided access to the PDMP within the hospital's EHR system or outside of the hospital's EHR system via a PDMP portal or secure website.

²⁸ American Hospital Association. (2017).

²⁹ API refers to technology that allows one software program to access the services provided by another software program. https://www.healthit.gov/sites/default/files/facas/HITJC_APIIF_Recommendations.pdf





There is also a consideration of whether the PDMP data is integrated as discrete data in the EHR or the data is integrated as a link to be clicked. PDMP data integrated as discrete data gives the provider the opportunity to review drug-drug interactions, drug allergies, better evaluate non-opioid analgesics, or triggers clinical decision support tools in the EHR based on the PDMP data. Integrating PDMP data as discrete data often requires an added cost to providers for access to an API gateway depending on the vendor. However, the need for this costly interface appears to be waning as, per this research, EHR technology can query and integrate PDMP data without API gateways. This costly interface approach to integrating discrete PDMP data into the EHR is likely to face attrition in the market in the immediate future.

Results from the AHA survey indicate that 90 percent of hospitals have a method for hospital staff to access their state’s PDMP (Figure 4).³⁰ The majority of the access occurs outside of the EHR, with 64 percent of hospitals reporting that they access the PDMP via a secure website or PDMP portal.³¹ Only 26 percent of hospitals stated access to the PDMP is achieved directly within the EHR.³²

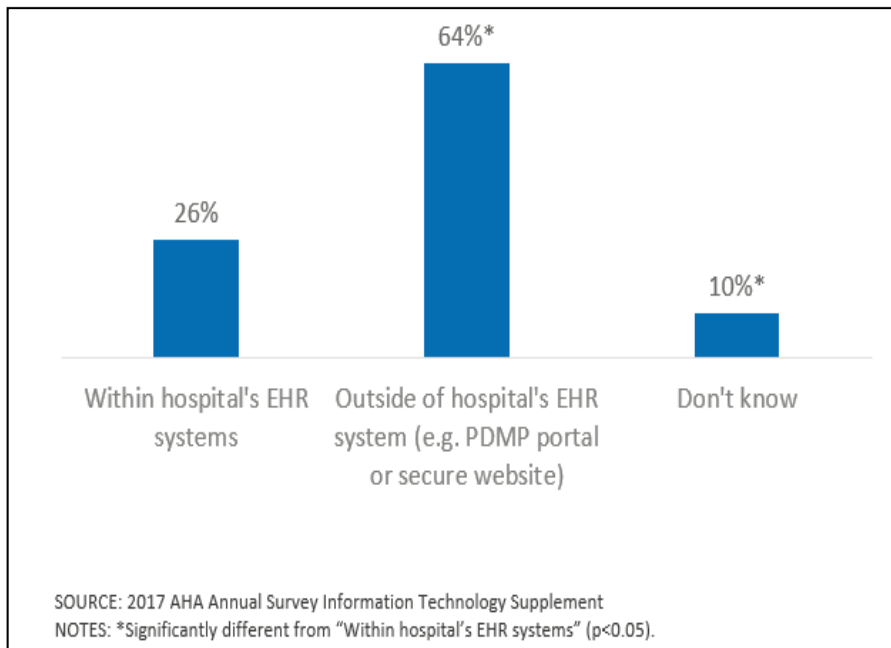
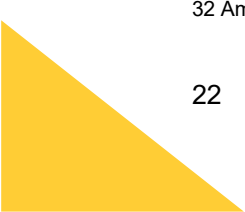


Figure 4. PDMP Integration Status of Hospitals. 2017 AHA Annual Survey Information Technology Supplement.

There is a wide range of PDMP integration in hospitals across states. The highest percentage of integration into hospital EHRs was reported in Rhode Island (64.5 percent), Ohio (59.1 percent), Delaware (55.7 percent), Alaska (52.7 percent), and Wisconsin (52.1 percent). The lowest percentage of

30 American Hospital Association. (2017).
 31 American Hospital Association. (2017).
 32 American Hospital Association. (2017).





integration into hospital EHRs was reported in Wyoming (0 percent), Utah (6.9 percent), New Mexico (7.8 percent), Indiana (8.5 percent), and Iowa (10.1 percent) as illustrated by Figure 5.³³

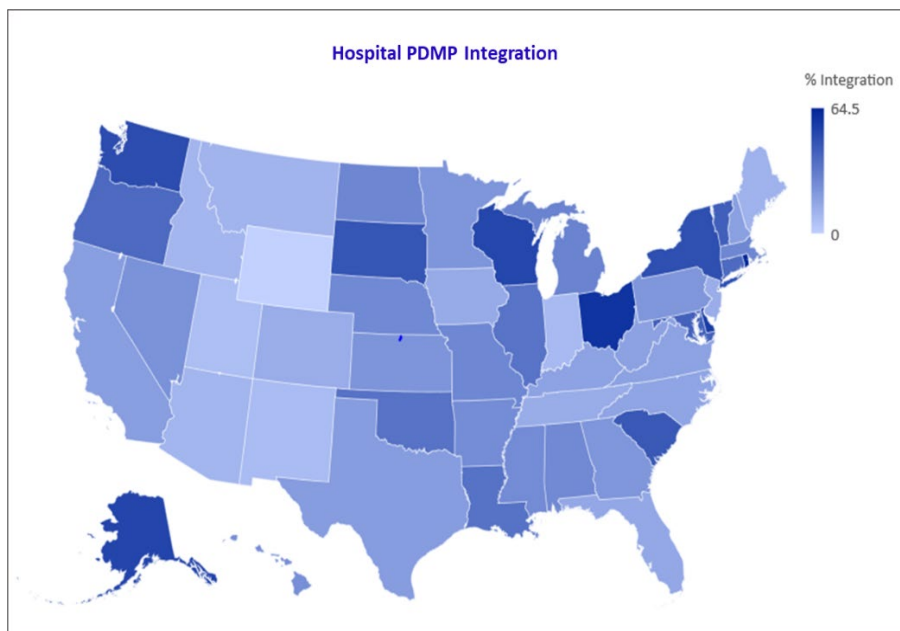


Figure 5. Nationwide Status of PDMP Integration in Hospitals.³⁴

PDMP INDICATOR: STANDARDS AND HUBS USED FOR PDMP DATA CAPTURE, EXCHANGE, AND REPORTING

Several technology standards are used to facilitate sharing of PDMP data across various components of the health IT ecosystem. This indicator reflects the various technical aspects of PDMP systems that enable data collection and sharing.

These standards include:

- The National Council for Prescription Drug Programs (NCPDP) SCRIPT standards versions 10.6 or V2017071, Health Level 7 version 2.0, and SMART on FHIR are used to exchange data with clinical systems;
- The Prescription Monitoring Information Exchange (PMIX) National Architecture versions 1.0 and 2.0 are used by PDMPs to share data with other states; and
- The American Society for Automation in Pharmacy (ASAP) standard versions 4.1 or 4.2 are used by pharmacy systems to report controlled substance prescription data to the PDMP.³⁵

33 American Hospital Association. (2017).

34 Guam and Puerto Rico have PDMPs, but PDMP hospital integration information was not available. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands do not have PDMPs and therefore are not included.

35 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2018). http://www.pdmpassist.org/pdf/ASAP_Version_20180801.pdf





Since health IT systems do not necessarily use the same standards as PDMPs, a hub is necessary to translate requests and responses to enable seamless communication across systems.³⁶ The request/response messages have the same information regardless of the standards in use, but the standards have different naming conventions for the message data. As an example (see Figure 6 below), step 1 could involve an EHR using the NCPDP 10.6 standard to request controlled substance information on a patient from the PDMP. PDMPs use the PMIX standard, so in step 2 of the request from an EHR to the PDMP a hub translates the NCPDP 10.6 request to a PMIX request in order for the PDMP to understand the request. In step 3, the hub forwards that request to the PDMP using the PMIX standard. In response (step 4), the PDMP sends the controlled substance information on the patient back to the hub. In step 5, the hub translates the response which using the PMIX standard to the NCPDP standard. In step 6, the hub passes the response back to the requesting health IT system for viewing in the EHR. For reporting purposes, pharmacy systems submit batch prescription data to the PDMP using the ASAP standards as required by state law.

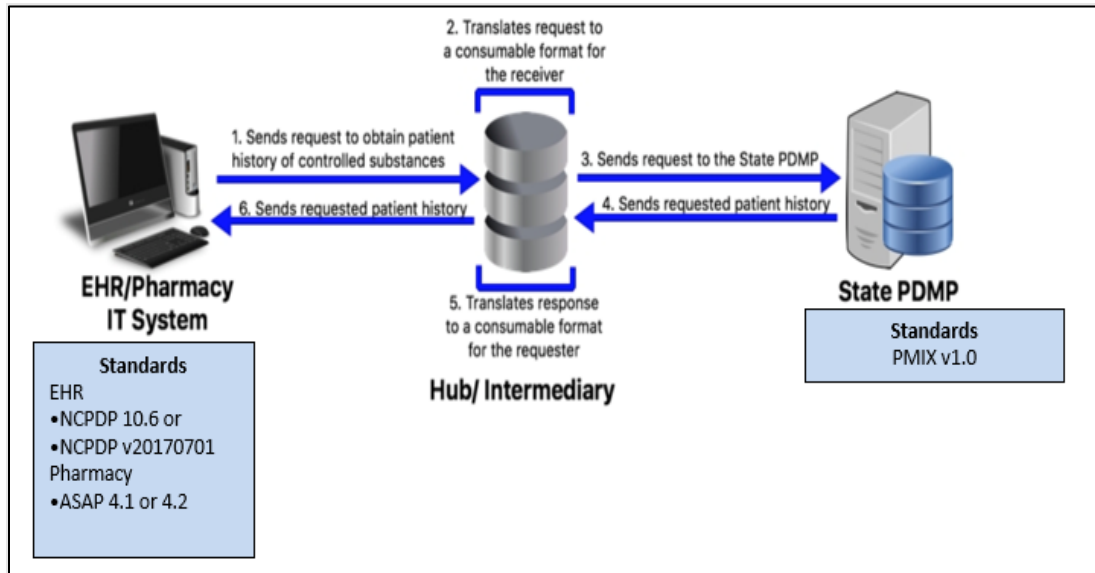


Figure 6. Data Exchange Standards Involved in PDMP and Health IT Integration

36 The Office of the National Coordinator for Health Information Technology. (2017). <https://www.healthit.gov/topic/health-it-initiatives/connecting-impact-linking-potential-prescription-drug-monitoring>



There are three key components of the PDMP data sharing ecosystem which include the following:

1. **PDMP Processor (see Figure 7):** A PDMP processor collects data from pharmacies or other dispensers, cleanses the data, and prepares files for submission to be included in the PDMP database. While six states run their own PDMP processors, most states utilize a vendor to facilitate this activity.³⁷ The vendor Appriss Health runs the PDMP processor for 43 states, territories, and the District of Columbia and uses the tool most commonly called PMP AWARxE.³⁸ The vendors Atlantic Associates and DrFirst manage the PDMP processors for the other four states.³⁹
2. **PDMP Host/Operator (see Figure 8):** The PDMP host/operator runs the PDMP systems for a state. PDMP systems are comprised of various capabilities (e.g., patient matching and calculation of MME scores) and components (e.g., web portals and firewalls) that vary significantly across states. In any given state, the PDMP system may include state-developed and vendor-based solutions along with the core PDMP database. A system includes capabilities for receiving requests from users, running queries against the database, and communicating the results back to the requester. The vendor Appriss Health hosts/operates the PDMP for 38 states and the District of Columbia. Thirteen state PDMPs or their HIEs host/operate their own PDMP platform⁴⁰ with support from vendors such as Atlantic Associates,⁴¹ NIC Inc.,⁴² and LogiCoy.⁴³ For Guam and Puerto Rico, data is not available regarding the host/operator.
3. **Facilitation of PDMP Integration in Health IT Systems (see Figure 9):** Secondary sources are not available to detail all vendor solutions to facilitate PDMP/EHR integration, but Appriss Health has a commonly employed tool, PMP Gateway, which enables PDMP integration with health IT systems and is currently being used in 38 states.⁴⁴

There are numerous add-on tools offered by vendors to provide services such as patient matching and CDS. However, these additional services and components were not reviewed as part of this landscape assessment.

37 National Council for Prescription Drug Programs. (2018).

https://www.ncdp.org/NCPDP/media/pdf/State_PMP_Tracking_Document.xlsx

38 National Council for Prescription Drug Programs. (2018).

https://www.ncdp.org/NCPDP/media/pdf/State_PMP_Tracking_Document.xlsx

39 National Council for Prescription Drug Programs. (2018).

https://www.ncdp.org/NCPDP/media/pdf/State_PMP_Tracking_Document.xlsx

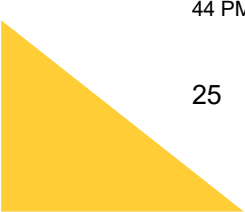
40 Electronic Health Record Association. (2018). <https://www.ehra.org/sites/ehra.org/files/EHRA%20PDMP%20-%20EPCS%20-%20State%20Landscape%20June%202018.pdf>

41 Atlantic Associates. (2012). <http://www.aainh.com/About.html>

42 BusinessWire. (2019). <https://www.businesswire.com/news/home/20190128005173/en/NIC-Awarded-Contract-Provide-State-Maryland-New>

43 LogiCoy. (2019). <https://logicoy.com/pdmp/>

44 PMP InterConnect. (2019). <https://www.pmpinterconnect.com/>



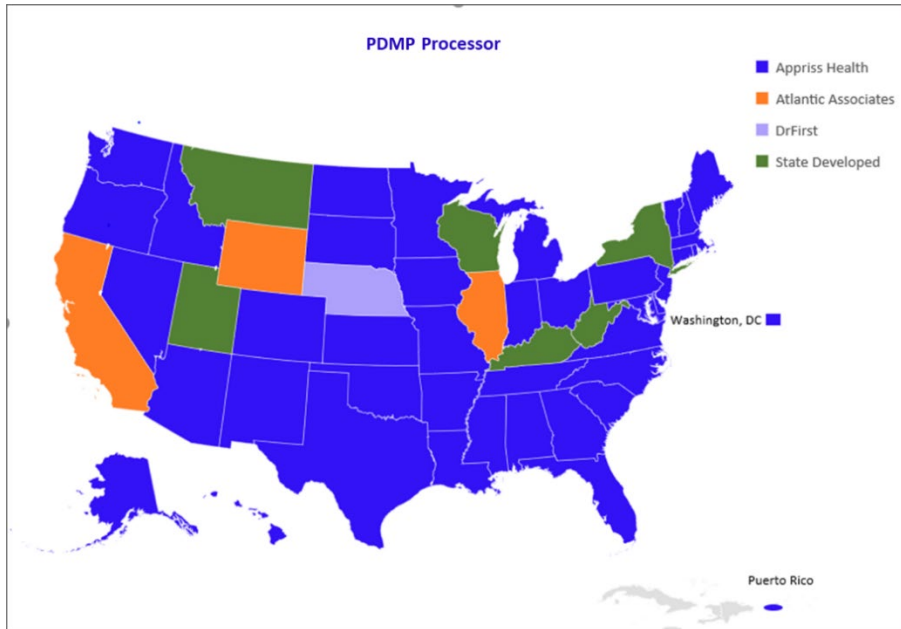


Figure 7. The Entity Managing the PDMP Processor by State. Guam has a PDMP and Appriss Health is the processor.⁴⁵

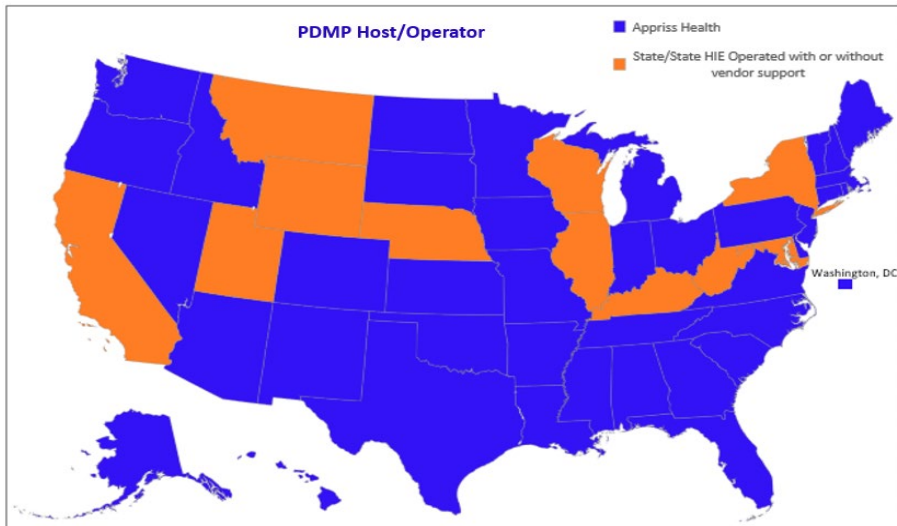


Figure 8. The Entity Operating the PDMP for each State.⁴⁶

⁴⁵ American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands do not have PDMPs and therefore are not included.

⁴⁶ Guam and Puerto Rico have PDMPs but host/operator information was not available. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands do not have PDMPs and therefore are not included.

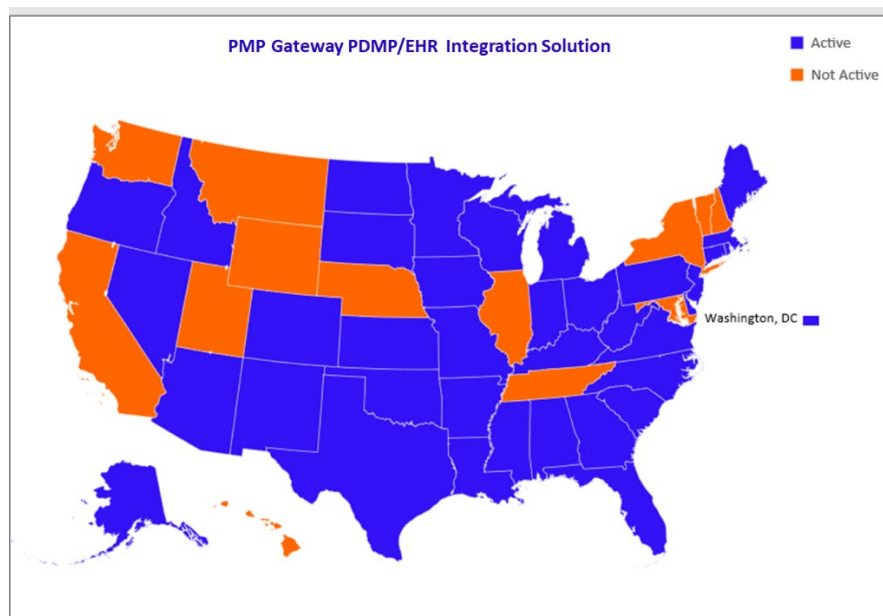


Figure 9. States (n=48) using the PMP Gateway PDMP/EHR Integration Solution.⁴⁷

PDMP Interstate Data Sharing

Interstate data sharing refers to the process of sharing PDMP data across state lines via interstate data sharing platforms called hubs. Each state has varying technical and policy requirements governing PDMPs (e.g., data collected, data placement, patient matching, PDMP role-based access, and security protocols) which affect a state’s ability to share data with other states. Once states reconcile the terms and conditions of the requirements and implement data sharing agreements with other states, interstate data sharing can occur.

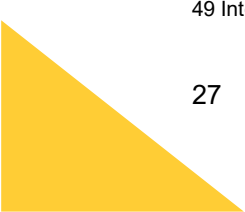
Two hubs support interoperability between PDMPs and facilitate sharing of PDMP data across state lines:

- **PMP InterConnect:** owned by the National Association of Boards of Pharmacy (NABP) and operated by Apriss Health, now known as Bamboo Health, which often requires prescribers to pay additional API gateway charges for an interface which integrates the PDMP data as discrete data; and
- **RxCheck:** funded by the U.S. Bureau of Justice Assistance (BJA) and operated by the Integrated Justice Information Systems Institute (IJIS) on BJA’s behalf which has no licensing costs.^{48,49}

47 Guam and Puerto Rico have PDMPs and PMP Gateway information was not available. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands do not have PDMPs and therefore are not included.

48 Prescription Drug Monitoring Program Training and Technical Assistance Center. (2019). <https://www.pdmpassist.org/RxCheck>

49 Integrated Justice Information Systems Institute. (2019). <https://www.ijis.org/page/HealthandHumanServices>





As of September 23, 2019, forty-eight states are currently participating in interstate data sharing through PMP InterConnect.⁵⁰ As of December, 17, 2021, Fifty-three states and territories are currently connected to RxCheck to facilitate the sharing of PDMP data across state lines (see Figure 11).⁵¹

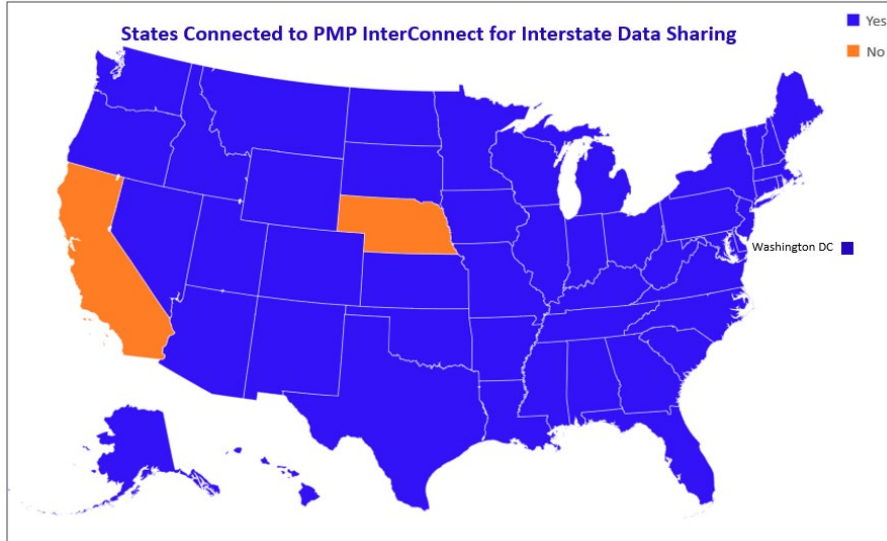


Figure 10. State Connections to PMP InterConnect for Interstate Data Sharing.⁵²

50 PMP InterConnect. (2019). <https://www.pmpinterconnect.com/>

51 PDMP Interstate Data Sharing Statue via RxCheck Hub (2020). https://www.pdmpassist.org/pdf/RxCheck_states_map.pdf

52 Guam has a PDMP and is in the process of connecting. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands and do not have PDMPs and therefore are not sharing PDMP data. Missouri does not have an official state PDMP but St. Louis County is administering a PDMP with 72 jurisdictions participating in the program.



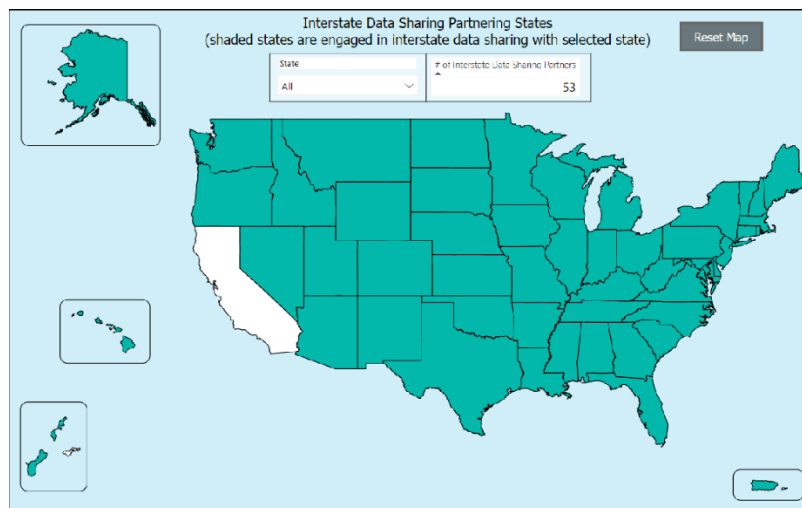


Figure 11. State (n=28) Connections to RxCheck for Interstate Data Sharing.^{53,54}

PDMP INDICATOR CONCLUSION

The PDMP serves as a central tool in collecting and sharing patient controlled substance prescription information with authorized health care professionals to support clinical decision-making and care delivery. Some key takeaways from the PDMP landscape assessment are:

- Data access and integration policies should be considered to provide guidance on how PDMP data is accessed, used, and stored in a health IT system. This guidance could include clarification on the privacy laws that govern PDMP data when placement is allowed in a health IT system.
- As states mandate provider PDMP checks, features such as CDS and risk scores may be used to supplement raw PDMP data to help guide treatment decisions. While these features can help to quickly alert clinicians of concerning patient prescription patterns, some states do not consider these features a method by which to satisfy PDMP check requirements.
- There is a great deal of variability across states in role-based data access and the definitions of those roles.
- Integration of PDMP data into hospital EHR systems remains a priority to provide convenient access to PDMP information. However, variability exists in hospital systems' PDMP integration efforts.
- There are many PDMP data exchange components that must work both together and across various entities to enable the flow of data using health IT standards. Understanding the various components of data exchange can assist with efforts to enable PDMP utilization across various health IT systems.

53 PDMP Interstate Data Sharing Statue via RxCheck Hub (2020). https://www.pdmpassist.org/pdf/RxCheck_states_map.pdf

54 Guam has a PDMP and is in the process of connecting. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands and do not have PDMPs and therefore are not sharing PDMP data.



Health IT Indicator

This section of the landscape assessment describes each health IT indicator associated with improved outcomes for the opioid crisis, including prevention, treatment, and recovery activities. It then reviews the data that was readily available on that indicator.

HEALTH IT INDICATOR CRITERIA DEVELOPMENT

Health IT is increasingly used to improve the quality and efficiency of health care delivery, patient safety, care coordination, and patient-centered care. Health IT can also help to improve behavioral health care by improving care coordination, information sharing, and access to care. Access and the exchange and use of behavioral health information as part of routine care can help to improve continuity in care services and support efforts toward achieving an interoperable healthcare system.⁵⁵ It also offers promising opportunities to address the opioid overdose epidemic. For example, the use of health IT has been applied to enhance access to PDMPs, enable the electronic prescribing for controlled substances (EPCS), and expand access to addiction treatment and recovery supports through technology solutions.

While investments are in progress to leverage health IT to address the opioid crisis, limited secondary sources are available to assess these nationwide efforts. Table 7 outlines the criteria used to evaluate the health IT indicator contained in the landscape assessment. The criteria were informed by subject matter experts.

Table 7. Health IT Indicator Selection Criteria

Health IT Indicator Selection Criteria	Definition
Availability of data from secondary sources	Information could be located through secondary sources or state specific laws and regulations.
Relevance	Aligned with identified federal priorities for addressing the opioid epidemic.
Incentives	Existing state or federal funding available to support the indicator.
Policy barriers	The indicator was evaluated based on whether it was impacted by current policies and/or legal/regulatory challenges.

HEALTH IT INDICATOR APPLICATION

Once the criteria were established, ONC selected a health IT indicator, as defined in Table 8, to include in the landscape assessment.

⁵⁵ The Office of the National Coordinator for Health Information Technology. (2018). <https://www.healthit.gov/topic/behavioral-health>





Table 8. Health IT Indicator Selected

Health IT Indicator	Definition
Electronic Prescribing for Controlled Substances (EPCS)⁵⁶	A technology solution that enables clinicians (registrants) to sign and electronically transmit controlled substance prescription information to a pharmacy given the technology provides (1) authentication, (2) nonrepudiation, and (3) message integrity.

HEALTH IT INDICATOR: ELECTRONICALLY PRESCRIBING FOR CONTROLLED SUBSTANCES (EPCS)

Electronically prescribing of drugs classified as controlled substances is a critical tool in addressing the nation's opioid crisis. EPCS provides benefits over paper prescriptions, which can be stolen, forged, or altered.⁵⁷ Furthermore, EPCS improves security by decreasing the potential abuse or misuse of controlled substances through a reduction in prescription drug diversion (e.g., redistribution of prescription drugs from medical sources into the illegal market), fraudulent activity (e.g., altering or replicating a prescription), and doctor shopping (i.e., patients seeing multiple clinicians for multiple, often duplicative prescriptions).⁵⁸

Additional benefits of EPCS include:⁵⁹

- Enhanced patient safety by eliminating errors associated with written prescriptions (e.g., illegible handwriting) and all prescriptions checked for clinical alerts.
- Lower costs for patients with more prescriptions checked for formulary coverage.
- Improved workflow efficiency by creating a single workflow to both write and electronically submit all prescriptions.

Policy and technology barriers around the implementation and utilization of EPCS include:⁶⁰

- Limited EPCS state legislative mandates.
- Incomplete information displayed on prescription orders, leading to delays in dispensing at the pharmacy.
- Software design issues, which can cause workflow challenges. High start-up costs, maintenance, and transaction fees.

The 2010 U.S. Drug Enforcement Administration (DEA) "[Electronic Prescriptions for Controlled Substances](#)" regulation provides practitioners with the option of writing prescriptions for controlled substances electronically. The rule also permits pharmacies to receive, dispense, and archive these

56 Drug Enforcement Agency. (2019). https://www.deadiversion.usdoj.gov/21cfr/cfr/1311/subpart_a.htm#2

57 Surescripts. (2019). <https://surescripts.com/enhance-prescribing/e-prescribing/e-prescribing-for-controlled-substances/>

58 Office of the National Coordinator for Health IT. Health IT Playbook. (2020). <https://www.healthit.gov/playbook/opioid-epidemic-and-health-it/#section-4-2>

59 Electronic Prescribing: Improving the Efficiency and Accuracy and Prescribing in the Ambulatory Care Setting. (2014). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3995494/>

60 U.S. Pharmacist. (2013). <https://www.uspharmacist.com/article/pros-and-cons-of-e-prescribing-in-community-pharmacies-42392>



electronic prescriptions. In 2016 alone, the number of electronic prescriptions for controlled substances transmitted via the Surescripts network increased by 256 percent. However, only 14 percent of controlled substances were prescribed electronically, compared to 90 percent of non-scheduled prescription drugs.⁶¹

Policymakers are noting the need to increase the utilization of EPCS in the fight against the opioid crisis through accelerated mandatory EPCS legislation at the state level. As of 2018, 15 states have mandated the use of EPCS: Arizona, California, Connecticut, Iowa, Maine, Massachusetts, Minnesota, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, Tennessee, and Virginia (see Figure 12). In addition, the SUPPORT Act mandates the use of EPCS for all Medicare Part D controlled substances by January 1, 2021, with enforcement actions not beginning until January 1, 2023.⁶²

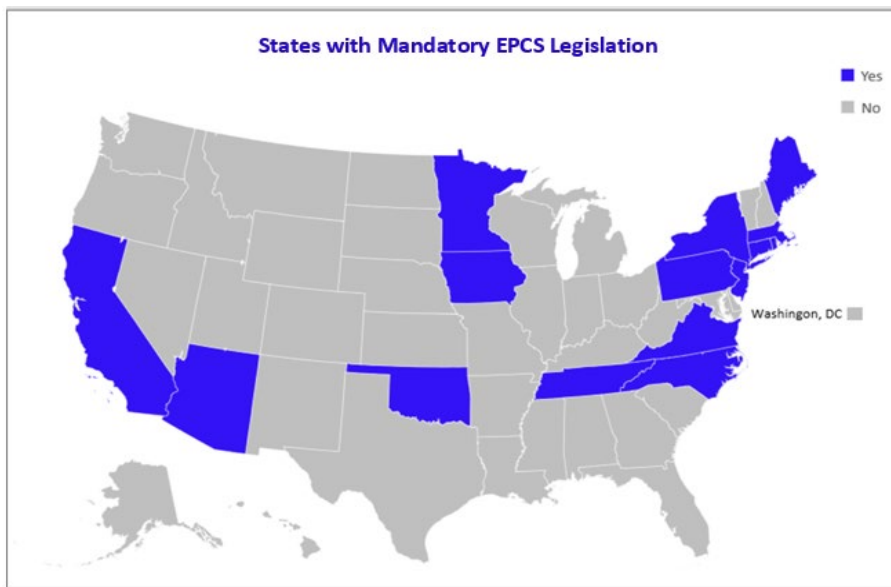


Figure 12. States with Mandatory EPCS Legislation.⁶³

CONSIDERATIONS ON TELEHEALTH FOR MAT

Although this is not an indicator assessed as part of the landscape assessment, there are considerations for states around telehealth for MAT. According to the 2016 Surgeon General’s Report on Alcohol, Drugs and Health, nearly 21 million people are grappling with SUD/OD in the United States, but only 10 percent are receiving treatment.⁶⁴ Research supports the perspective that opioid addiction is a medical disorder that can be treated effectively with medications when they are administered under conditions consistent with their pharmacological efficacy and when treatment includes necessary supportive services

61 Surescripts. (2019). <https://surescripts.com/enhance-prescribing/e-prescribing/e-prescribing-for-controlled-substances/>

62 Surescripts. (2019). <https://surescripts.com/news-center/intelligence-in-action/opioids/laws-requiring-the-e-prescribing-of-opioids-have-gained-momentum-but-prescriber-adoption-is-playing-catch-up/>

63 EPCS legislation information was not available in Guam or Puerto Rico. American Samoa, Northern Mariana Islands, and the U.S. Virgin Islands was not included

64 The Surgeon General’s Report on Alcohol, Drugs, and Health. (2016). <https://addiction.surgeongeneral.gov/sites/default/files/surgeon-general-report.pdf>





such as psychosocial counseling, treatment for co-occurring disorders, medical services, and vocational rehabilitation.⁶⁵ MAT for opioid addiction has been effective in facilitating recovery from opioid addiction for many patients.⁶⁶

The U.S. Department of Health and Human Services (HHS) Opioid Strategy aims to improve access to prevention, treatment, and recovery support services to prevent the health, social, and economic consequences associated with opioid misuse and addiction, and to enable individuals to achieve long-term recovery.⁶⁷ It further aims to help those struggling with addiction through evidence-based treatment and recovery support services.

According to SAMHSA, MAT is defined as the use of medications approved by the Food and Drug Administration (FDA), in combination with counseling and behavioral therapies, to provide a “whole-patient” approach to the treatment of SUD/OD.⁶⁸ There are three FDA-approved medications commonly used to treat OUD: methadone, naltrexone, and buprenorphine.⁶⁹ MAT has been shown to be more effective in treating OUD than treatments that do not use medication and may reduce the risk of overdose, improve social functioning, and decrease criminal activity and infectious disease rates.⁷⁰ Despite its effectiveness, there are barriers to the implementation of MAT including stigma, lack of institutional support, lack of prescribing physicians, lack of expertise, and inadequate reimbursement.⁷¹

The use of telehealth has been noted as a possible solution to increase the availability of MAT by providing access to specialized care remotely through video conferencing or other modalities.⁷² Through enhanced convenience, reduced travel time, and cost savings, telehealth can offer additional benefits for patients, physicians, and the healthcare system, such as:^{73,74}

- Increased access to specialty providers for patients located in rural areas;
- Access to educational and training resources for clinicians to expand services; and
- Access to care in languages other than English.

65 Medication-Assisted Treatment for Opioid Addiction in Opioid Treatment Programs. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 2005. (Treatment Improvement Protocol (TIP) Series, No. 43.) Available from: <https://www.ncbi.nlm.nih.gov/books/NBK64170/>

66 Medication-Assisted Treatment for Opioid Addiction in Opioid Treatment Programs. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 2005. (Treatment Improvement Protocol (TIP) Series, No. 43.) Available from: <https://www.ncbi.nlm.nih.gov/books/NBK64170/>

67 U.S. Department of Health and Human Services. (2018). <https://www.hhs.gov/opioids/sites/default/files/2018-09/opioid-fivepoint-strategy-20180917-508compliant.pdf>

68 Substance Abuse and Mental Health Services Administration. (2018). <https://www.samhsa.gov/medication-assisted-treatment>

69 Substance Abuse and Mental Health Services Administration. (2018). <https://www.samhsa.gov/medication-assisted-treatment>

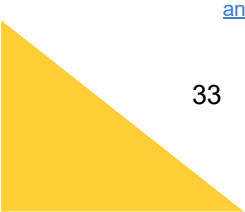
70 Agency for Healthcare Research and Quality. (2016). https://effectivehealthcare.ahrq.gov/sites/default/files/pdf/opioid-use-disorder_technical-brief.pdf

71 Agency for Healthcare Research and Quality. (2016). https://effectivehealthcare.ahrq.gov/sites/default/files/pdf/opioid-use-disorder_technical-brief.pdf

72 Center for Connected Health Policy/Public Health Institute. (2018). https://www.cchpca.org/sites/default/files/2018-09/CALIFORNIA%20OPIOID%20ISSUE%20BRIEF%20FINAL%20JUNE%202018_0.pdf

73 The Office of the National Coordinator for Health Information Technology. (2018). <https://www.healthit.gov/topic/health-it-initiatives/telemedicine-and-telehealth>

74 Office of the Assistant Secretary for Planning and Evaluation. (2017). <https://aspe.hhs.gov/basic-report/using-telehealth-identify-and-manage-health-and-substance-use-disorder-conditions-rural-areas>





Federal legislation and regulation can affect clinicians' use of telehealth to deliver MAT. In 2008, the Ryan Haight Online Pharmacy Consumer Protection Act of 2008 (Ryan Haight Act) was passed.⁷⁵ The Ryan Haight Act is enforced by the DEA and sets limits on how telehealth tools are used to prescribe controlled substances and requires prescribers to conduct in-person medical evaluations as a prerequisite to prescribing buprenorphine for the treatment of SUD/OD through telehealth.⁷⁶

The Drug Addiction Treatment Act of 2000 (DATA 2000) was introduced as part of Section 3502 of the Children's Health Act of 2000, and amended the Controlled Substances Act, which allows qualified practitioners (e.g., board certified addiction specialists) to apply for a waiver to prescribe buprenorphine for the treatment of OUD.^{77,78}

In 2018, the DEA issued "Use of Telemedicine While Providing Medication Assisted Treatment" to clarify how practitioners can use telemedicine as a tool to expand buprenorphine treatment for opioid use disorder under current DEA regulations.⁷⁹ According to the statement, pursuant to the provisions of the Ryan Haight Act, DEA-registered practitioners acting within the United States are exempt from the in-person medical evaluation requirement as a prerequisite to prescribing controlled substances via the Internet if the practitioner is engaged in the practice of telemedicine and is acting in accordance with certain other requirements.^{80,81}

Additional barriers to the utilization of telehealth for MAT include:⁸²

- A limited number of practitioners have applied for a DATA 2000 waiver.
- There are varying interpretations of statutes such as DATA 2000 and the Ryan Haight Act, which guide the use of telehealth for MAT.
- There are limited fee-for-service reimbursement structures.
- Less than half of the states participate in the interstate medical license compact, which allows clinicians, including OUD treatment providers, to apply for a license to practice telehealth in other states.

75 Ryan Haight Online Pharmacy Consumer Protection Act. (2008). <https://www.federalregister.gov/documents/2009/04/06/E9-7698/implementation-of-the-ryan-haight-online-pharmacy-consumer-protection-act-of-2008#:~:text=The%20Ryan%20Haight%20Online%20Pharmacy%20Consumer%20Protection%20Act%2C%20which%20was,by%20means%20of%20the%20Internet>.

76 U.S. Department of Justice Drug Enforcement Administration. (2018). <https://www.dea.gov/press-releases/2018/01/23/dea-announces-step-increase-opioid-addiction-treatment>

77 Drug Addiction Treatment Act of 2000. (2000). <https://www.congress.gov/106/plaws/publ310/PLAW-106publ310.pdf>

78 U.S. Department of Justice Drug Enforcement Administration. (2019).

https://www.deadiversion.usdoj.gov/pubs/docs/dwp_buprenorphine.htm

79 U.S. Department of Health and Human Services. (2019). <https://www.hhs.gov/opioids/sites/default/files/2018-09/hhs-telemedicine-hhs-statement-final-508compliant.pdf>

80 <https://www.deadiversion.usdoj.gov/coronavirus.html>

81 https://www.deadiversion.usdoj.gov/mtgs/pract_awareness/resources/Telemedicine_MAT.pdf

82 Office of the Assistant Secretary for Planning and Evaluation. (2017). <https://aspe.hhs.gov/basic-report/using-telehealth-identify-and-manage-health-and-substance-use-disorder-conditions-rural-areas>





According to 2010-2017 data from privately insured and Medicare Advantage enrollees, preliminary telehealth for MAT statistics include:⁸³

- 81 percent of telehealth for MAT visits were delivered in an outpatient setting.
- 46 percent of telehealth for MAT services were provided by primary care practitioners.
- 29 percent of telehealth for MAT services were provided by psychiatrists.

While few states have implemented telehealth for MAT, some have begun piloting initiatives, such as the Hub-and-Spoke model in Vermont and the Project Extension for Community Healthcare Outcomes (ECHO) at the University of New Mexico (UNM).⁸⁴

Vermont's Hub-and-Spoke Model

In 2013, Vermont implemented the Care Alliance for Opioid Addiction (Hub-and-Spoke), a statewide treatment response to the opioid crisis that integrates care across primary, acute, and behavioral health settings. Recognizing the vital role of MAT, the Hub-and-Spoke model expands access to FDA-approved drugs for OUD treatment and related counseling services by creating two interrelated systems for care delivery.⁸⁵ Specialists initiate treatment at a hub, and once the patient is stabilized (e.g., when cravings are diminished and misuse is substantially reduced or discontinued), care is then transferred to a community-based provider, or spoke.⁸⁶

In Vermont's model, the hubs are specialty treatment centers located across the state and regulated by SAMHSA as opioid treatment programs (OTPs). These sites are the only licensed providers of both methadone and buprenorphine. Hubs initiate treatment, stabilize patients, and provide ongoing subject matter expertise and consultation to the community-based providers functioning as spokes.⁸⁷ Vermont's spokes consist of community-based prescribers who provide office-based opioid treatment (OBOT) and work in tandem with a multidisciplinary staff, such as nurses and clinical case managers. These health care professionals connect patients with wraparound services that support recovery by addressing non-treatment needs such as housing and transportation.⁸⁸

Under Vermont's approach to OUD, individuals at a hub must come in daily to receive medication, typically methadone or buprenorphine. As patients stabilize over time, they move to a spoke, where some patients have the option to check in remotely via teleconference instead of in person. Three years after the implementation of the Hub-and-Spoke model in Vermont, the number of data-waivered physicians able to prescribe buprenorphine in Vermont for OUD increased by 64 percent. In 2013, only 650 patients were receiving methadone treatment in OTPs and 1,700 were receiving buprenorphine in OBOTs. By

83 Health Affairs. (2018). <https://www.healthaffairs.org/doi/10.1377/hlthaff.2018.1119.750924/full/>

84 U.S. News. (2018). <https://www.usnews.com/news/healthiest-communities/articles/2018-10-04/hospitals-join-the-battle-against-opioids>

85 The University of Vermont. (2017).

http://www.healthvermont.gov/sites/default/files/documents/pdf/ADAP_Hub_and_Spoke_Evaluation_2017_1.pdf

86 Rural Health Information Hub. (2017). <https://www.ruralhealthinfo.org/project-examples/1015>

87 The University of Vermont. (2017).

http://www.healthvermont.gov/sites/default/files/documents/pdf/ADAP_Hub_and_Spoke_Evaluation_2017_1.pdf

88 The University of Vermont. (2017).

http://www.healthvermont.gov/sites/default/files/documents/pdf/ADAP_Hub_and_Spoke_Evaluation_2017_1.pdf





September 2016, OTPs (hubs) were serving 3,147 patients, and 3,457 patients were receiving buprenorphine at OBOTs (spokes).⁸⁹

UNM's Project ECHO

Project ECHO in New Mexico aids patients in isolated communities with limited access to addiction management specialists to receive treatment. Through the Project ECHO Pain and Opioid Management program, the UNM Health System connects practitioners in rural communities with its Albuquerque-based team of pain management specialists to provide MAT.⁹⁰ During weekly teleconferences, as many as 20 medical teams in remote regions discuss patient cases with specialists in Albuquerque and learn from each other's experiences through an adapted hub-and-spoke model.

Since its inception a decade ago, Project ECHO Pain and Opioid Management has been an important resource in reducing the rate of overdose deaths in New Mexico, a state that was previously among the highest rates in the nation. It has been adopted by the Indian Health Service and more than two dozen institutions nationwide. At the beginning of the project in 2006, only 36 physicians in the state had obtained the DATA 2000 waiver required by the DEA to prescribe buprenorphine. By 2016, 375 New Mexico physicians obtained this waiver after Project ECHO training. In 2016, HHS earmarked \$9 million in grants to improve OUD treatment in rural counties in Colorado, Oklahoma, and Pennsylvania using the ECHO model.⁹¹

HEALTH IT INDICATOR CONCLUSION

The health IT community is moving to increase the adoption of health IT solutions to treat SUD/OUD. There are various efforts in establishing data sharing among care teams (e.g., primary care providers and behavioral health specialists). However, health care participants' willingness and/or ability to adopt, use, and exchange data may be deterred by state and federal policies, concerns about privacy and security, and a general lack of resources needed to support long-term sustainability.⁹² One example is expanding access to MAT through the use of electronic information and telecommunications technologies (i.e., telehealth) which may include video conferencing, internet applications, store-and-forward imaging, streaming media, and terrestrial and wireless communications. There are varying interpretations of the Data 2000 waiver and the Ryan Haight Act that limit the implementation and utilization of telehealth for MAT.

An important takeaway from this assessment is:

- The widespread adoption of EPCS has not been realized due to technical and policy barriers. However, EPCS mandates will facilitate increased adoption in states (e.g., Section 2003, Every Prescription Conveyed Securely of the SUPPORT Act).

89 Rural Health Information Hub. (2017). <https://www.ruralhealthinfo.org/project-examples/1015>

90 U.S. News. (2018). <https://www.usnews.com/news/healthiest-communities/articles/2018-10-04/hospitals-join-the-battle-against-opioids>

91 U.S. News. (2018). <https://www.usnews.com/news/healthiest-communities/articles/2018-10-04/hospitals-join-the-battle-against-opioids>

92 The Commonwealth Fund. (2016). <https://www.commonwealthfund.org/publications/journal-article/2016/jun/behavioral-health-information-technology-chaos-clarity>





Key Findings and Emerging Themes

This nationwide assessment represents a snapshot in time and is not intended to be an exhaustive list of all PDMP and health IT solutions used to address the opioid crisis in each state. Following the criteria outlined in Table 1 and Table 7, PDMP and health IT indicators were selected and examined. Based on the evaluation of the information gathered, this report covers the policy and technical challenges that emerged. The available secondary sources provide some insight into the impact of each indicator in addressing SUD/ODU, which is a great start. In order to achieve the best results, state must continue to actively work towards implementing PDMP and health IT solutions to better address the opioid epidemic.

This assessment may serve as a starting point to help policymakers and relevant stakeholders determine which health IT approaches (and the corresponding policies that may enable or limit their use) are underway to assist in the identification, prevention, and treatment of SUD/ODU. The findings presented in this report could assist in aligning and increasing state and federal efforts to address the opioid crisis.

Based on the findings of this landscape assessment, key themes emerged, including:

- PDMP
 - When PDMP data is integrated into health IT systems, placement permissions varied based on state policies and regulations. Privacy rules that apply to the data within health IT systems are not always consistent or explicitly defined (e.g., are PDMP privacy policies in alignment with EHR privacy policies?).
 - Currently, many states' statutes, regulations, and policies are silent on the development and use of PDMP data interpretation tools (e.g., risk scores) with academic literature mixed on the clinical significance of the risk-scores generated by a proprietary algorithm. While data interpretations of raw PDMP data may aid in easier identification of concerning patient prescription patterns, some states have issued guidance that a review of data interpretations does not constitute compliance with a state PDMP check mandate.
 - There is significant variability in the number of roles and categories of authorized users allowed to access the PDMP in each state. Additionally, some of the individuals directly involved in the identification, prevention, or treatment of SUD/ODU (e.g., behavioral health professionals, EMS personnel) do not have access to PDMP data in most states.
 - Only a small number of hospital systems enable access to PDMPs within the workflow of the EHR system, so authorized users often have to access the PDMP data outside of the workflow (e.g., an online portal), which adds to clinical burden and reduces the likelihood of checking the PDMP data.
 - Due to the various components within each state's PDMP ecosystem (e.g., processor, host/operator), coordination is needed to enable data exchange within and among states.
- Health IT
 - Varying EPCS state mandate requirements and technology capabilities exist across states and health care practice environments.





PDMPs are a vital tool that provide critical information necessary to address the opioid crisis. However, there is inadequate information available that quantifies the reach of newer health IT solutions such as EPCS and telehealth for MAT. As SUD/ODU challenges continue to evolve, so do the corresponding PDMP and health IT solutions and policies being implemented. Conducting a continuous in-depth assessment to determine the role of PDMP and health IT indicators within each state is necessary to monitor these ever-evolving challenges.





Appendix A: States and Territories with Operational PDMPs

States with Operational PDMPs	States with Operational PDMPs	States with Operational PDMPs
Alabama	Maine	Oregon
Alaska	Maryland	Pennsylvania
Arizona	Massachusetts	Rhode Island
Arkansas	Michigan	South Carolina
California	Minnesota	South Dakota
Colorado	Mississippi	Tennessee
Connecticut	Missouri (St. Louis County)	Texas
Delaware	Montana	Utah
Florida	Nebraska	Vermont
Georgia	Nevada	Virginia
Hawaii	New Hampshire	Washington
Idaho	New Jersey	West Virginia
Illinois	New Mexico	Wisconsin
Indiana	New York	Wyoming
Iowa	North Carolina	District of Columbia
Kansas	North Dakota	Guam
Kentucky	Ohio	Puerto Rico
Louisiana	Oklahoma	

Figure 13. States and Territories with Operational PDMPs

Notes: Figure includes 50 States, DC and territories of Guam and Puerto Rico. The state of Missouri does not have a PDMP, but St. Louis County in Missouri has a PDMP that is used by 72 jurisdictions in the state to cover 84 percent of the population.⁹³

93 Saint Louis County. (2019). <https://www.stlouisco.com/Health-and-Wellness/PDMP>





Appendix B: Data Placement

Dates listed represent the date the statute or regulation was reviewed.

STATUTORY OR REGULATORY LANGUAGE AUTHORIZES PLACEMENT OF THE PDMP DATA OR REPORT IN A MEDICAL OR HEALTH RECORD (information and citations may have been updated anytime during or after publication of this report).

- Ariz. Rev. Stat. § 36-2606H. <https://www.azleg.gov/arstitle> 8/2/18.
- Cal. Health & Safety Code § 11165.1(d). <https://leginfo.legislature.ca.gov/faces/codes.xhtml> 7/31/18.
- Colo. Rev. Stat. § 24-72-601. <https://leg.colorado.gov/colorado-revised-statutes> 8/7/18.
- Ga. Code § 16-13-60(c.1)(3). <https://georgia.gov/popular-topic/georgia-law> 7/31/18.
- Ind. Code § 25-14-1-23.5, § 25-22.5-13-7, § 25-23-1-19.9, § 25-27.5-5-4.5, § 25-29-1-17, § 35-48-7-11.1(p). www.iga.in.gov/legislative/laws/2018/ic/titles/001 8/8/18.
- Ky. Rev. Stat. § 218A.202(9)(e). www.lrc.ky.gov/statutes/ 8/1/18.
- La. Admin. Code tit. 48, § 7861B.1.b. <https://www.doa.la.gov/Pages/osr/lac/books.aspx> 8/3/18.
- Ma. H.B. 4742, Section 38 (2018). <https://malegislature.gov/Bills/190/H4742> 9/26/18.
- Miss. Admin. Code 30-2640 R. 1.3 and 1.7 as amended. <http://www.sos.ms.gov/adminsearch/default.aspx> 8/11/18 and 2/5/19.
- N.H. Code Admin. R. Ph 1505.02(c). www.gencourt.state.nh.us/rules/about_rules/listagencies.htm 8/10/18.
- N.J. Admin. Code § 13:35-7.6(b)5, § 13:37-7.9A(b)5, § 13:38-2.5(b)5, § 13:45A-35.10(a), § 13:45A-35.10(d). <http://www.lexisnexis.com/hottopics/njcode> 8/10/18.
- Ohio Rev. Code § 4729.86(A)(1)(d). <http://codes.ohio.gov/orc/> 8/10/18.
- Okla. Stat. tit. 63, § 2-309D.G.2.a. www.oklegislature.gov/osstatuestitle.html 8/9/18.
- Tenn. Code § 53-10-306(h)(4). www.tsc.state.tn.us/Tennessee%20Code 8/7/18.
- Tex. Health & Safety Code § 481.076(a-2). <https://statutes.capitol.texas.gov> 8/8/18.
- Va. Code § 32.1-127.1:03K. <https://law.lis.virginia.gov/vacode> 8/2/18.
- Wash. Admin. Code § 246-470-090. <https://apps.leg.wa.gov/wac/> 7/30/18.
- W.Va. Code § 16-5Y-5(j). <http://wvlegislature.gov/WVCODE/Code.cfm> 8/3/18.
- W.Va. Code R. § 15-8-7.7. <http://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=50279&Format=PDF> 8/3/18.
- W.Va. Code R. § 69-11-20.7.f., § 69-11-23.2., § 69-11-24.2.d. <https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=49387&Format=PDF> 8/3/18.
- W.Va. Code R. § 69-12-19.7.f., § 69-12-22.2., § 69-12-23.2.d.





<https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=49388&Format=PDF> 8/3/18.

W.Va. Code R. § 24-7-3.3, § 24-7-3.4, § 24-7-3.5.

<https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=24761&Format=PDF> 8/3/18.

W.Va. Code R. § 19-14-3.3, § 19-14-3.4, § 19-14-3.5.

<https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=24788&Format=PDF> 8/3/18.

W.Va. Code R. § 5-10-3.3, § 5-10-3.4, § 5-10-3.5.

<https://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=25619&Format=PDF> 8/3/18.

Fl. Notice of Proposed Rule 64K-1.001, ID 20751324, § 64K-1.008, Pub. Date 8/27/18.

<https://www.flrules.org/gateway/ruleNo.asp?id=64K-1.001> 9/27/18 and 2/5/19.

N.J. Notice of Proposed Rule § 13:45A-6A, 50 N.J. Register, Issue 20 (October 15, 2018)

<http://www.lexisnexis.com/hottopics/njoal/> 2/5/19.





Appendix C: PDMP Integration

Dates listed represent the date the statute or regulation was reviewed.

STATUTORY OR REGULATORY LANGUAGE AUTHORIZES PDMP INTEGRATION OR INTEROPERABILITY WITH HEALTH IT SYSTEMS BUT IS SILENT ON STORAGE OF PDMP DATA WITHIN A MEDICAL OR HEALTH RECORD (information and citations may have been updated anytime during or after publication of this assessment)

Del. Code tit. 16, § 4798(v)(3). <https://delcode.delaware.gov/> 7/31/18.

720 Ill. Comp. Stat. 570/316(f), 720 Ill. Comp. Stat. 570/318(n). <http://www.ilga.gov/legislation/ilcs/ilcs.asp> 7/30/18.

Ill. Admin. Code tit. 77, § 2080.190(d), § 2080.210(a). <ftp://www.ilga.gov/jcar/admincode/titles.html> 7/30/18.

Iowa Code § 124.551.3, § 124.553.1.e. <https://www.legis.iowa.gov/law/iowaCode> 7/30/18.

Iowa Admin. Code r. 657-37.4(8). <https://www.legis.iowa.gov/law/administrativeRules/agencies> 7/30/18.

Md. H.B. 115, Section 1(a) (2018). <http://mgaleg.maryland.gov/2018RS/bills/hb/hb0115T.pdf> 9/26/18.

Md. S.B. 13, Section 1(a) (2018). <http://mgaleg.maryland.gov/2018RS/bills/sb/sb0013T.pdf> 9/26/18.

Md. S.B. 896, Section 1(c)(1)(iii) (2018). <http://mgaleg.maryland.gov/2018RS/bills/sb/sb0896E.pdf> 9/26/18.

Neb. Rev. Stat. § 71-2454(2)(c), § 71-2454(2)(3), § 71-2454(5)(a), § 71-2454(6), § 71-2455. <https://nebraskalegislature.gov/laws/> 8/2/18.

Nev. Rev. Stat. § 453.162 1.(f)(2). <https://www.leg.state.nv.us/NRS/> 8/7/18.

N.C. Gen. Stat. § 90-113.74(c)(10). <https://www.ncleg.gov/Laws/GeneralStatutes> 8/2/18.

Or. Rev. Stat. § 431A.865(2)(a)(c), § 431A.865(8).

https://www.oregonlegislature.gov/bills_laws/Pages/ORS.aspx 8/11/18.

Or. Admin. R. 333-023-0830(1).

https://sos.oregon.gov/archives/pages/oregon_administrative_rules.aspx 8/11/18.

35 Pa. Cons. Stat. § 872.5(5)(x). <https://www.legis.state.pa.us/cfdocs/legis/li/public/> 8/3/18.

R.I. Gen. Laws § 21-28-3.32(a)(10). <http://webserver.rilin.state.ri.us/Statutes/> 8/10/18.

S.C. Code § 44-53-1645(C). <https://www.scstatehouse.gov/code/statmast.php> 8/3/18.

S.C. H.B. 4950, Part 1B § 117-X900 (2018).

https://www.scstatehouse.gov/sess122_2017-2018/appropriations2018/tap1b.pdf 9/27/18.

S.D. Codified Laws § 34-20E-7(1). http://sdlegislature.gov/statutes/Codified_Laws/ 8/17/18.

Utah Code § 58-37f-303(f)(2) and (3), § 58-37f-303(6)(a), § 58-37f-304(2)(d)(i), § 58-37f-304(2)(f).





<https://le.utah.gov/xcode/code.html> 8/9/18.

Utah Admin. Code R156-37f-303(1) and (2). <https://rules.utah.gov/publications/utah-adm-code/> 8/9/18.

Wis. Stat. § 961.385(7s)(a). <https://docs.legis.wisconsin.gov/statutes/prefaces/toc> 8/2/18.

Wis. Admin. Code CSB § 4.09(4). https://docs.legis.wisconsin.gov/code/admin_code 8/2/18.





Appendix D: Data Access, Use or Disclosure

Dates listed represent the date the statute or regulation was reviewed.

STATUTORY OR REGULATORY LANGUAGE INDICATES THAT ACCESS, USE OR DISCLOSURE RULES GOVERNING MEDICAL OR HEALTH INFORMATION APPLY TO STORED PDMP DATA OR REPORT (information and citations may have been updated anytime during or after publication of this assessment)

Cal. Health & Safety Code § 11165.1(d). <https://leginfo.legislature.ca.gov/faces/codes.xhtml> 7/31/18.

Colo. Rev. Stat. § 24-72-601. <https://leg.colorado.gov/colorado-revised-statutes> 8/7/18.

Ky. Rev. Stat. § 218A.202(9)(e). www.lrc.ky.gov/statutes/ 8/1/18.

N.J. Admin. Code § 13:45A-35.10(a). <http://www.lexisnexis.com/hottopics/njcode> 8/10/18.

Tenn. Code § 53-10-306(h)(4). www.tsc.state.tn.us/Tennessee%20Code 8/7/18.

Tex. Health & Safety Code § 481.076(a-2). <https://statutes.capitol.texas.gov> 8/8/18.

Wash. Admin. Code § 246-470-090. <https://apps.leg.wa.gov/wac/> 7/30/18.





Appendix E: Key PDMP-Related Statutes, Regulations, and Bills

Dates listed represent the date the statute or regulation was reviewed.

PDMP-RELATED STATUTES, REGULATIONS, AND BILLS REVIEWED TO GATHER INFORMATION REGARDING THE DATA STORAGE AND DATA INTERPRETATION INDICATORS FOR THE LPASO PROJECT (information and citations may have been updated anytime during or after publication of this assessment)

U.S. STATES AND THE DISTRICT OF COLUMBIA

ALABAMA

Alabama Code <http://alisondb.legislature.state.al.us/alison/CoA.aspx> 8/7/18.

Alabama Administrative Code <http://www.alabamaadministrativecode.state.al.us/> 8/7/18 and 12/1/18.

Ala. Code §§ 20-2-210 to 20-2-220

Ala. Code §§ 34-24-600 to 34-24-610

Ala. Admin. Code r. 270-x-2-.11, 270-x-2-.23

Ala. Admin. Code r. 420-7-2-.11 to 420-7-2-.13

Ala. Admin. Code r. 540-X-4-.01 to 540-X-4-.09

Ala. Admin. Code r. 540-X-12-.01 to 540-X-12-.16

Ala. Admin. Code r. 540-X-18-.01 to 540-X-18-.14

Ala. Admin. Code r. 540-X-19-.01 to 540-X-19-.10

Ala. Admin. Code r. 540-X-21-.01 to 540-X-21-.04

Ala. Admin. Code r. 540-X-20-.01 to 540-X-20-.08

Ala. Admin. Code r. 930-X-1-.01 to 930-X-1-.38

ALASKA

Alaska Statutes <http://www.legis.state.ak.us/basis/statutes.asp> 8/3/18.

Alaska Administrative Code <http://www.legis.state.ak.us/basis/aac.asp> 8/3/18 and 12/1/18.

Alaska Stat. § 08.80.030

Alaska Stat. § 11.71.900

Alaska Stat. § 17.30.200

Alaska Admin. Code tit. 12, §§ 28.953, 44.445 and 52.855 – 52.895





ARIZONA

Arizona Revised Statutes <https://www.azleg.gov/arstitle> 8/2/18.

Arizona Administrative Code <https://azsos.gov/rules/arizona-administrative-code> 8/2/18 and 12/1/18.

Ariz. Rev. Stat. §§ 36-2601 to -2610

Ariz. Rev. Stat. §§ 32-1501, 32-1907 and 32-3219

Ariz. Rev. Stat. §§ 23-1026 and 23-1062.02

Ariz. Admin. Code §§ 4-23-501 to 4-23-505

Ariz. Admin. Code § 4-19-513

Ariz. Admin. Code § 9-10-120

Ariz. Admin. Code §§ 9-10-2003 and 2006, 24 Ariz. Admin. Reg. 3037-3040 (October 26, 2018)

<https://azsos.gov/rules/arizona-administrative-register>

ARKANSAS

Arkansas Code

<https://portal.arkansas.gov/agency/bureau-of-legislative-research/service/arkansas-code-search-laws-and-statutes/> 7/30/18.

Arkansas Rules and Regulations <https://www.healthy.arkansas.gov/rules-and-regulations> 7/30/18, 8/31/18 and 2/5/19.

Ark. Code §§ 20-7-601 to 20-7-615

Ark. Code § 12-18-622

Ark. Code § 20-7-707

Ark. Code R. 007.07.4-I -XV Prescription Monitoring Program

Ark. State Medical Board, Regulation 41: Prescription Drug Monitoring Program

<https://www.armedicalboard.org/Professionals/pdf/mpa.pdf>

Ark. State Board of Nursing Rules, Chapter 4: APRN <https://www.arsbn.org/rules>

Ark. State Board of Optometry, Chapter V, Article IX, Prescribing of Controlled Substances

<http://www.aoptometry.org/rules.htm>

CALIFORNIA

California Codes <http://leginfo.legislature.ca.gov/faces/codes.xhtml> 7/31/18.

California Code of Regulations

[https://govt.westlaw.com/calregs/Index?transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/calregs/Index?transitionType=Default&contextData=(sc.Default)) 7/31/18.

Cal. Bus. & Prof. Code §§ 208, 209, 2196.8, and 4068

Cal. Civ. Code § 56.36

Cal. Health & Safety Code §§ 11164.1, 11165-11165.5, and 11190-11192

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W.Va. Code R. §§ 69-11-20, 69-11-23 and 69-11-24 (Title 69, Series 11)

W.Va. Code R. §§ 69-12-19, 69-12-22 and 69-12-23 (Title 69, Series 12)

WISCONSIN

Wisconsin Statutes <https://docs.legis.wisconsin.gov/statutes/prefaces/toc> 8/2/18.

Wisconsin Administrative Code https://docs.legis.wisconsin.gov/code/admin_code 8/2/18.

Wis. Stat. § 146.82

Wis. Stat. § 450.01

Wis. Stat. § 961.385

Wis. Admin. Code CSB §§ 4.01 to 4.15

WYOMING

Wyoming Statutes <https://www.wyoleg.gov/StateStatutes/StatutesConstitution> 9/3/18.

Wyoming Administrative Rules <https://rules.wyo.gov/> 9/3/18 and 2/5/19.

Wyo. Stat. § 35-7-1060

Wyo. Bd. of Pharmacy, Comm. of Drugs & Sub. Control, Ch. 8 §§ 1-11

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GUAM

Guam Code <http://www.guamcourts.org/CompilerofLaws/gca.html> 8/29/18.

9 Guam Code § 67.301





PUERTO RICO

Laws of Puerto Rico <https://estado.pr.gov/en/laws-of-puerto-rico/> 8/10/18.

PDMP Enabling Legislation-Medida P S0033

<http://www.oslpr.org/2017-2020/leyes/pdf/ley-70-05-Ago-2017.pdf> 8/10/18.

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Appendix F: Glossary of Terms

Table 9. Glossary of Terms

Term	Definition
21st Century Cures Act ⁹⁴	Signed into law on December 13, 2016, this federal legislation is designed to help accelerate medical product development, advance research for serious illnesses, support mental health services, and address the opioid epidemic.
42 CFR Part 2, Confidentiality of Substance Use Disorder Patient Records ⁹⁵	Regulates confidentiality regarding all records relating to the identity, diagnosis, prognosis, or treatment of any patient in a substance abuse program that is conducted, regulated, or directly or indirectly assisted by any department or agency of the United States.
Behavioral Health ⁹⁶	The promotion of mental health, resilience and wellbeing; the treatment of mental and substance use disorders; and the support of those who experience and/or are in recovery from these conditions, along with their families and communities.
Delegate ⁹⁷	Authorized individual who can access PDMP data on behalf of a prescriber or dispenser.
Dispensers ⁹⁸	The entities that must submit data to the PDMP for drugs they have dispensed. These entities include pharmacies, hospitals, prescribers (including veterinarians), and correctional facilities.
Drug Schedule ⁹⁹	Five categories that drugs, substances, and certain chemicals used to make drugs are classified into depending on the drug’s acceptable medical use and the drug’s abuse or dependency potential.
Electronic Health Record (EHR) ¹⁰⁰	A digital version of a patient’s paper chart that is a real-time, patient-centered record that makes information available instantly and securely to authorized users.
Electronic Prescriptions for Controlled Substances (EPCS) ¹⁰¹	A technology framework that allows prescribers to enter prescription information into a computer device – like a tablet, laptop, or desktop computer – and securely transmit the prescription to pharmacies using a specific software program and connectivity to a transmission network. When a pharmacy receives such a request, it can begin filling the medication right away.

94 Health Information and Management Systems Society. (2017). <https://www.himss.org/news/21st-century-cures-act-summary>

95 National Center for State Courts. (2012). <https://www.ncsc.org/sitecore/content/microsites/future-trends-2012/home/privacy-and-technology/substance-abuse.aspx>

96 Substance Abuse and Mental Health Service Administration. (2018). <https://www.samhsa.gov/section-223/certification-resource-guides/key-terms-definitions>

97 Pennsylvania Department of Health. (2017). https://www.health.pa.gov/topics/Documents/Programs/PDMP/2-PDMP_What-How-PMDP-Guide_F.pdf

98 Nebraska Health Information Initiative. (2018). https://nehii.org/index.php?option=com_docman&view=download&alias=170-prescription-drug-monitoring-program-glossary-of-terms-and-organizations&category_slug=forms-documents&Itemid=1110

99 U.S. Drug Enforcement Administration. (2019). <https://www.dea.gov/drug-scheduling>

100 The Office of the National Coordinator for Health Information Technology. (2018). <https://www.healthit.gov/faq/what-electronic-health-record-ehr>

101 Practice Fusion. (2018). <https://www.practicefusion.com/epcs/what-is-epcs/>



Term	Definition
Every Prescription Conveyed Securely Act ¹⁰²	Signed into law on October 24, 2018 as Section 2003 of the SUPPORT Act, this federal legislation requires electronic prescribing of controlled substance prescriptions for coverage under the Medicare Part D Program.
Health Information Exchange (HIE) ¹⁰³	Allows health care professionals and patients to appropriately access and securely share a patient's medical information electronically.
Health Information Technology (Health IT) ¹⁰⁴	The application of information processing involving both computer hardware and software that deals with the placement, retrieval, sharing, and use of healthcare information, data, and knowledge for communication and decision making.
Health Information Technology for Economic and Clinical Health (HITECH) Act ¹⁰⁵	This federal law, enacted in 2009 as part of the American Recovery and Reimbursement Act, provides HHS with the authority to establish programs to improve health care quality, safety, and efficiency through the promotion of health IT, including EHRs and private and secure electronic health information exchange.
Hub ¹⁰⁶	A server that enables the secure sharing of PDMP data between states and PDMP systems (not to be confused with hub from the Vermont hub-and-spoke model).
Interstate Data Sharing ¹⁰⁷	The exchange of PDMP data across state boundaries through bidirectional queries.
Interoperability ¹⁰⁸	According to section 4003 of the 21st Century Cures Act, the term 'interoperability,' with respect to health information technology, means such health information technology that— "(A) enables the secure exchange of electronic health information with, and use of electronic health information from, other health information technology without special effort on the part of the user; (B) allows for complete access, exchange, and use of all electronically accessible health information for authorized use under applicable State or Federal law; and (C) does not constitute information blocking as defined in section 3022(a)."
Live Video Conferencing ¹⁰⁹	Two-way interactive audio-video conferencing between a patient at an originating site and a provider at a distant site.
Morphine Milligram Equivalents (MMEs) ¹¹⁰	The milligrams of morphine equal to an opioid dose. This is used to calculate the total amount of opioids prescribed, accounting for differences in drug type and strength.

102 GovTrack. (2018). <https://www.govtrack.us/congress/bills/115/hr3528>

103 The Office of the National Coordinator for Health Information Technology. (2017). <https://www.healthit.gov/topic/health-it-basics/health-information-exchange>

104 The Office of the National Coordinator for Health Information Technology. (2018). <https://www.healthit.gov/topic/health-it-basics/glossary>

105 The Office of the National Coordinator for Health Information Technology. (2019). <https://www.healthit.gov/topic/laws-regulation-and-policy/health-it-legislation>

106 Academy of Pharmacy. (2015). <https://www.pharmacist.com/article/path-national-prescription-drug-monitoring>

107 Centers for Disease Control and Prevention. (2017). https://www.cdc.gov/drugoverdose/pdf/pehriie_report-a.pdf

108 The Office of the National Coordinator for Health Information Technology. (2018). <https://www.healthit.gov/topic/interoperability>

109 The Office of the National Coordinator for Health Information Technology. (2018). <https://www.healthit.gov/topic/health-it-initiatives/telemedicine-and-telehealth>

110 Centers for Disease Control and Prevention. (2017). <https://www.cdc.gov/drugoverdose/opioids/terms.html>



Term	Definition
Prescription Drug Monitoring Program (PDMP) ¹¹¹	An electronic database that tracks controlled substance prescriptions in a state. PDMPs can provide health authorities with timely information about prescribing and patient behaviors that contribute to the epidemic and facilitate a quick and targeted response.
PDMP Integration ¹¹²	The inclusion of PDMP data into EHRs, pharmacy dispensing systems, and HIEs through automated queries.
Secondary Sources ¹¹³	Sources that describe, summarize, or discuss information or details originally presented in another source.
Store and Forward ¹¹⁴	The electronic transmission of medical images, records, or pre-recorded videos through secure email transmission.
The SUPPORT for Patients and Communities Act ¹¹⁵	Signed into law on October 24, 2018, this federal legislation is aimed at addressing the nation’s opioid overdose epidemic through prevention, treatment, and recovery initiatives.
Telehealth ¹¹⁶	The use of electronic information and telecommunications technologies to support and promote remote clinical healthcare, patient and professional health-related education, public health and health administration. Technologies include video conferencing, Internet applications, store-and-forward imaging, streaming media, and terrestrial and wireless communications.
Telehealth for MAT ¹¹⁷	Delivery of medication-assisted treatment across distance via a variety of technologies.

111 Centers for Disease Control and Prevention. (2017). <https://www.cdc.gov/drugoverdose/pdmp/states.html>

112 Centers for Disease Control and Prevention. (2017). https://www.cdc.gov/drugoverdose/pdf/pehriie_report-a.pdf

113 Northcentral University Library. (2019). <https://ncu.libguides.com/researchprocess/primaryandsecondary>

114 The Office of the National Coordinator for Health Information Technology. (2018). <https://www.healthit.gov/topic/health-it-initiatives/telemedicine-and-telehealth>

115 GovTrack. (2018). <https://www.govtrack.us/congress/bills/115/hr6/summary>

116 Health Resources and Services Administration. (2019). <https://www.hrsa.gov/rural-health/telehealth/index.html>

117 U.S. Department of Health and Human Services. (2018). <https://www.hhs.gov/opioids/sites/default/files/2018-09/hhs-telemedicine-hhs-statement-final-508compliant.pdf>





Appendix G: Glossary of Acronyms

Table 10. Glossary of Acronyms

Acronym	Definition
42 CFR Part 2	Title 42 of the Code of Federal Regulations Part 2
AHA	American Hospital Association
API	Application Program Interface
ASAP	American Society for Automation in Pharmacy
BJA	Bureau of Justice Assistance
CDS	Clinical Decision Support
CMMI	Center for Medicare and Medicaid Innovation
CMS	Centers for Medicare & Medicaid Services
DATA 2000	Drug Addiction Treatment Act of 2000
DEA	Drug Enforcement Administration
ECHO	Extension for Community Healthcare Outcomes
EHR	Electronic Health Record
EHRA	Electronic Health Record Association
EMS	Emergency Medical Services
EPCS	Electronic Prescribing of Controlled Substances
FDA	Food and Drug Administration
FFS	Fee-For-Service
Health IT	Health Information Technology
HHS	The U.S. Department of Health and Human Services
HIE	Health Information Exchange
HIPAA	Health Insurance Portability and Accountability Act
HITECH Act	Health Information Technology for Economic and Clinical Health Act
IJIS	Integrated Justice Information Systems
LPASO	Leveraging Health IT and PDMPs for Addressing SUD/ODU
MAT	Medication-Assisted Treatment
MME	Morphine Milligram Equivalents
NABP	National Association of Boards of Pharmacy





Acronym	Definition
NAMSDL	National Alliance for Model State Drug Laws
NCPDP	National Council for Prescription Drug Programs
OBOT	Office-Based Opioid Treatment
ONC	The Office of the National Coordinator for Health Information Technology
OTP	Opioid Treatment Program
ODU	Opioid Use Disorder
PDMP	Prescription Drug Monitoring Program
PDMP TTAC	Prescription Drug Monitoring Program Training and Technical Assistance Center
PMIX	Prescription Monitoring Information Exchange National Architecture
SAMHSA	Substance Abuse and Mental Health Services Administration
SUD	Substance Use Disorder
SUPPORT Act	Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act
UNM	University of New Mexico

