PDMP TTAC

Prescription Drug Monitoring Program Training and Technical Assistance Center

Prescription Drug Monitoring Program

PDMP Administrators' Orientation Guide

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I. Introduction

Following a Prescription Drug Monitoring Program (PDMP) administrators' meeting in 2017, one need identified by the administrators was the development of an orientation package for new PDMP administrators. A workgroup composed of administrators and PDMP Training and Technical Assistance Center (TTAC) staff was formed to draft an orientation document. This resulted in the creation of the PDMP Administrators' Orientation Package, released in 2018. Since 2018, there have been changes, advancements, and new challenges within the PDMP community. As a result, PDMP TTAC recognized the need to update and revise the Orientation Package. To ensure that the guide included relevant topics, PDMP TTAC sought the input and feedback of PDMP administrators. The following is an updated and current Orientation Package. PDMP TTAC considers this a "living" document that will be updated as needed.

II. PDMP Overview

History of PDMPs

Introduction

PDMPs are designed to facilitate the collection, analysis, and reporting of information on the prescribing, dispensing, and use of prescription drugs within a state. A primary goal of PDMPs is to uphold both the state laws ensuring access to appropriate pharmaceutical care by citizens and the state laws related to controlled substance misuse and diversion.

The earliest PDMPs were established primarily as enforcement and regulatory tools providing data to officials responsible for enforcing drug laws and overseeing the prescribing and dispensing of these drugs by health care professionals. While this role continues in the majority of current PDMPs, the focus of PDMPs has, for the most part, expanded to enhance patient care and assist in developing drug misuse prevention and treatment strategies.

Fifty states, the District of Columbia, and 3 U.S. territories (Guam, Northern Mariana Islands, and Puerto Rico) currently have operational PDMPs.

The state agencies housing the PDMPs vary from state to state and fall into four major categories: public health, law enforcement, licensing or regulatory boards, and substance misuse licensing authorities. Regardless of which agency houses the program, the PDMPs' goals remain the same.

While in recent years PDMPs have gained notoriety and have been recognized as important programs, this was not always the case. The history of PDMPs spans almost a century and has experienced opposition, misperception, and misinformation regarding their purpose and value.

Early PDMPs faced many legal and political battles as they tried to implement their programs. Opposition from the pharmaceutical industry, practitioner organizations, and various advocacy groups eventually led one state to take the fight to the U.S. Supreme Court.

Role of the Federal Government

During the early years of PDMPs, the U.S. Drug Enforcement Administration (DEA) was the one federal agency supporting PDMPs. Later, the federal Department of Justice (DOJ) would play a significant role in the establishment and growth of PDMPs. In 2003, DOJ began the Harold Rogers Prescription Drug Monitoring Grant Program (HRPDMP). Congressman Rogers, a leader in combating the misuse of prescription drugs, established this grant program at DOJ, administered through its Bureau of Justice Assistance (BJA), which made funding available to states that were interested in establishing, implementing, and enhancing PDMPs. The availability of federal funds through the HRPDMP played an integral role in the proliferation of PDMPs.

Today, federal agencies (i.e., Substance Abuse and Mental Health Services Administration, Department of Health and Human Services, Centers for Medicare & Medicaid Services, Office of the National Coordinator for Health Information Technology, Office of National Drug Control Policy, Veterans Health Administration, and Indian Health Service) and others recognize the value of PDMPs and fully support their mission. In addition, they have established policies and enacted laws and regulations that allow participation in PDMPs and provide their own funding for the enhancement of existing PDMPs.

The First PDMP (1918)

The origin of PDMPs can be documented to the early 20th century. In the early 1900s, drugs such as heroin and cocaine were allowed by federal and state laws to be prescribed by doctors and dispensed in pharmacies. In 1918, New York State became concerned with a growing drug problem and passed drug legislation to address the crisis.

One part of the laws required a doctor prescribing a certain quantity of heroin, cocaine, morphine, opium, or codeine to use “serially numbered official prescriptions blanks” issued by the state health department. A pharmacy was then required to send a copy of the official prescription to the health department within 24 hours of dispensing the drug. These laws remained in effect for 3 years until they were rescinded. Even though the program was eliminated, New York State had drawn up the blueprint for what years later would become known as prescription drug monitoring programs.

Early PDMPs (1939–1989)

Established in 1939, California's PDMP is the oldest continuously operated PDMP in the country. The 1939 law (pages 755–762) placed the administration of the PDMP in a newly created Bureau of Narcotic Enforcement. It was followed by Hawaii in 1943, which housed its program in the state narcotic enforcement agency. Eighteen years later, in 1961, Illinois established its program, which was the first program to be housed within a department of health. In 1967, Idaho became the first to house the PDMP in a board of pharmacy.

The 1970s saw three additional programs come into existence: Pennsylvania (1972), which was originally housed in the Attorney General's Office and moved to the state health department in 2016; New York (1973); and Rhode Island (1978). In the 1980s, two additional programs were established: Texas (1981) and Michigan (1988).

During these first 50 years, all of the PDMPs had the same characteristics:

- A tool for the enforcement of drug laws
- Collected prescription information only on Schedule II controlled substances
- Required multicopy (duplicate or triplicate) state-issued prescription forms to prescribe and dispense Schedule II medications
- Required sending prescription information to the state within 30 days from the time the drug was dispensed

Official Prescription Forms

The early PDMPs relied on state-issued prescription hard-copy forms to obtain data. These forms, known as multicopy prescriptions, came in both a three-part (triplicate) form and a two-part (duplicate) form. The triplicate form consisted of an original copy, which was the top form that doctors would write on, and two additional carbon forms. One form would stay with the practitioner, one would remain at the pharmacy, and one would be mailed to the PDMP. The duplicate form contained one original copy and the state copy. These forms were serialized and purchased by practitioners and health care institutions. A "book" of official prescriptions generally included 25 to 100 prescriptions at a cost of approximately 5 cents per form. Some PDMPs were able to use the monies derived from the sale of the forms to fund the PDMP. It was a generally accepted practice for the PDMP to contract the printing of these forms under secure conditions, to an outside service provider, but the actual distribution to the doctors would occur by the state. The PDMP recorded the serial numbers issued to a practitioner or institution. Several PDMPs had one form for a practitioner and a separate form for institutions. Different-color prescriptions and different serial number sequences would distinguish practitioners'

prescriptions from institutional ones. Practitioners and institutions were required to report to the PDMP any forms that were lost or stolen. The PDMP would record the serial number(s) of the lost or stolen prescription forms and would provide that information to a pharmacist upon request.

Once the practitioner received their book of official prescriptions, they would use the forms whenever they prescribed a Schedule II controlled substance to a patient. If the state issued triplicate forms, the prescriber would keep one copy and give the patient the other two. The patient would then take the other two parts to the pharmacy, where the pharmacist would dispense the medication to the patient. The pharmacist would file one copy in the pharmacy and mail the third copy to the state. In states that employed the duplicate official form, the practitioner would give both copies to the patient and the pharmacist would keep one copy and mail the other copy to the state.

PDMPs Enhancements

State-issued paper prescription forms were used by all existing PDMPs, from 1939 to 1989, as a means by which information was sent through the mail to the agency housing the PDMP. The state agency would then enter the data into a state database, and reports were able to be generated; modern technology and the World Wide Web (i.e., the internet) were just starting to emerge.

Taking advantage of new and advancing technology, Oklahoma in 1990 broke the mold of previous PDMPs with its landmark legislation requiring electronic transmission of prescription data from a pharmacy directly to the state. As time went on, the majority of the earlier PDMPs, who had state-issued paper forms, eliminated the forms in favor of electronic transmission.

The Oklahoma experience opened the door for other states to consider establishing PDMPs, because electronic transmission lowered the cost to operate such a program by eliminating the costs associated with the printing and distribution of the forms and data entry.

The 1990s also saw another major change in PDMPs' operations when Nevada, in 1995, became the first state to require its PDMP to collect prescription data for Schedules II through V controlled substances. Many existing PDMPs were aware of the problem with only collecting Schedule II controlled substance data: unscrupulous individuals turned to other controlled substance schedules to divert. As these schedules were not being monitored by the state, the diversion of these drugs either went undetected or was difficult and time-consuming to investigate.

The year 1995 also marked the development and release of the American Society for Automation in Pharmacy (ASAP) implementation guide. This new electronic data format, first used in Massachusetts, allowed pharmacies to submit specified data elements to the PDMP. Over the next 30 years, the ASAP standard has undergone several version updates and enhancements to meet PDMP needs and requests and is used by every PDMP.

Along with Oklahoma and Nevada, six other states passed PDMP legislation in the 1990s: Massachusetts (1992), Utah (1995), West Virginia (1995), Indiana (1997), Guam (1998), and Kentucky (1998). In this last decade of the 20th century, 16 PDMPs became operational (Guam's program became operational in 2013).

U.S. Supreme Court Decision

In 1972, New York State passed its Controlled Substance Act, commonly referred to as the Rockefeller Laws. The newly enacted laws were nationally known for the mandatory sentencing of drug offenders. A part of these laws allowed the commissioner of health to establish a PDMP. Immediately, court challenges ensued questioning the legality of such a program. This question would be argued in various state and federal courts until it finally reached the U.S. Supreme Court.

The issue before the Supreme Court was whether New York State had the legal authority to collect information on the prescribing and dispensing of controlled substances and whether patient confidentiality was being violated under the U.S. Constitution. While the arguments for and against the PDMP were specific to New York State, any decision contrary to New York would have had a devastating ripple effect to existing PDMPs and would have possibly eliminated future PDMPs from being established in other parts of the country or, at the very least, considerably delayed their establishment.

The Supreme Court ruled that New York State did have the authority to collect the information as part of its "police powers." The Supreme Court went further to state that the PDMP was not unconstitutional and did not violate patient confidentiality. The decision allowed continuation of New York's program and indirectly confirmed the legitimacy of the other existing programs, opening the door for other states to consider passing PDMP laws.

Twenty-first Century

By the beginning of the 2000s, PDMPs had begun to expand around the country. The old mantra by detractors of how PDMPs were detrimental to patient care in that their mere existence produced a chilling effect on prescribers and dispensers was still being tried but was no longer effective. Research into the effectiveness of PDMPs began to provide evidence that PDMPs were a valuable instrument for providing patient safety and identifying patients at risk for drug overdose. Drug manufacturers, who once vigorously opposed PDMPs, began to publicly support them.

The first decade of the 21st century saw the largest number of states implementing PDMPs. A total of 27 PDMPs were established from 2000 to 2010. In 2002, the state of Virginia passed legislation to implement a PDMP; this was followed in 2003 by Maine, Tennessee, and Wyoming. New Mexico passed legislation in 2004, and in 2005, six states passed legislation: Alabama, Colorado, Mississippi, North Carolina, North Dakota, and Ohio. In 2006, five more states enacted PDMP legislation: Connecticut, Iowa, Louisiana, South Carolina, and Vermont. In 2007, Arizona, Minnesota, and Washington saw their legislation become effective. Finally, the last 3 years of the first decade saw eight additional states pass laws: Alaska, Kansas, and New Jersey in 2008; Florida and Oregon in 2009; and Delaware, South Dakota, and Wisconsin in 2010.

By 2010, there were 44 PDMPs. In 2011, Arkansas, Georgia, Maryland, Montana, and Nebraska passed their laws. The last New England state to implement a PDMP law was New Hampshire in 2012, followed by the District of Columbia in 2014. This decade ended with the enactment of legislation in Puerto Rico in 2017 and the Northern Mariana Islands in 2020. Lastly, the state of Missouri enacted legislation in 2021 and became operational as a statewide PDMP in 2023 following 8 years of a PDMP operated by the Saint Louis County Department of Public Health.

Building on the experience and knowledge of earlier programs, the more recently created PDMPs were implemented faster, employing best practices and breaking new ground in bringing PDMPs to an expanded potential. PDMPs continue to evolve into one of the most efficient and effective tools in the battle to reduce prescription drug misuse and diversion. States are continually improving their programs and being more responsive to stakeholders with more timely and accurate information. In contrast to early programs, today's PDMPs are recognized as an important tool in addressing the drug misuse epidemic. Health care professionals, regulatory boards, public health agencies, and the law enforcement community all look to PDMPs to provide them with information. All PDMPs allow access to their data by prescribers and dispensers. Some PDMPs are now allowing other nontraditional stakeholders to access their data (e.g., drug courts, medical examiners, drug misuse counselors, payers, patients). Starting with Oklahoma in 1990, 50 states have reduced their data collection intervals to 1 business day or less. In 2010, 5 states

(Colorado, Delaware, Louisiana, Nevada, and Oklahoma) had mandatory query laws; today, 50 states and the District of Columbia have such requirements. In 2010, Utah was the only state that allowed prescribers to have delegates to access the PDMP on their behalf; today, 50 states, as well as the District of Columbia, the Northern Mariana Islands, and Puerto Rico, have delegate legislation in place. PDMPs in some states have become more than just a repository of prescription information: 45 PDMPs collect or have access to additional data sources. Other improvements and best practices have been put in place that include interstate data sharing, now available in all PDMPs to some degree, and integration of PDMP data with health information exchanges (HIEs), electronic health records (EHRs), or pharmacy dispensing systems (PDSs) in 50 PDMPs.

The effectiveness of PDMPs and the role they are playing in reducing drug misuse and diversion is evident. See Appendix A for a literature review on the impact that PDMPs have had in curtailing the prescription drug problem. What started as embattled and fragile programs among a small number of states has grown into one of the most effective resource tools in the fight against prescription drug misuse and diversion. The future of PDMPs is on solid ground, and the full impact of these programs is just now beginning to be realized.

PDMP Technology

PDMP Software System Management

Third-party-hosted Solutions

Third-party-hosted solutions are PDMP software systems developed, maintained, and hosted by a third-party software service provider and sold to the state PDMP. Third-party-hosted solution service providers will typically manage the software for multiple state PDMPs. Most third-party-hosted solution service providers will maintain standard core software offered across all customers with some ability to customize per customer. More than 80 percent of PDMPs employ this method of PDMP operations.

- Benefits

This model can be effective for states with limited staff resources. The economy of scale for a service provider who builds a common core platform can be beneficial for customers. This solution requires fewer full-time employees compared to an in-house solution.

- Challenges

Changes to the core platform may require consensus agreement from all customers, change orders potentially resulting in additional costs to the state PDMP, or delays in implementation due to competing priorities or reluctance on the part of the service provider to dedicate resources if the initiatives are not financially beneficial to the service provider.

In-house Solutions

An in-house solution can be described as the software solution for PDMP functions, such as data collection and data presentation, as well as the hardware to support the system, which is managed by the agency responsible for the PDMP or the state's information technology (IT) resources. Some states use contracted resources to staff projects or for staff augmentation.

- Benefits

The key difference between this and third-party-supported solutions (described below) lies in the prioritization of initiatives. Since the resources are internal to the state and often dedicated to the system, identification of initiatives and prioritization may not be in competition with other customers. Often, issues can be resolved more quickly with an in-house solution because the workforce can be dedicated to the project until such time as the issues are resolved. Depending on the number of resources available, in-house solutions can develop specialization by the staff to meet the needs of the PDMP.

- Challenges

In-house solutions require a strong IT organization within the state. Having sufficient staff to accommodate new projects as well as day-to-day operations of the systems can be challenging. Hiring skilled IT staff members on state budgets may be difficult depending on the state salary structure. Small IT staffing models can have negative outcomes when turnovers occur, causing a backlog of projects. In contrast to the benefits listed above, if the technology resources are shared between other agencies, competition and prioritization may need to be addressed.

Third-party-supported Solutions

Third-party-supported solutions are solutions that are hosted in-house with part of the IT functions supported by a third-party service provider. Third-party-supported functions can range from software development to integration support. Some states have contracted the development of their PDMP system to a third party with the daily system management

responsibilities falling to in-house staff. Others have contracted some aspects of the functionality, such as data collection or integration, to a third party.

- Benefits

This model may allow state PDMPs to expand functionality without increased staffing. Each project can be bid out to different entities that have expertise in the desired solution. Highly specialized IT staff can be costly. Using these staff on limited scope projects through a third-party staffing support solution can be more effective than hiring permanent staff. Similar to third-party service provider solutions, this solution also requires fewer full-time employees compared to an in-house solution. The data is still hosted and managed by the PDMP or its state IT resources.

- Challenges

The most significant problem with this method is that it can be difficult to piece different projects from the different service providers together. This type of solution requires strong administration and IT leadership to manage the contracts and the coordination of projects and resources. In addition, the PDMP will need to ensure that service providers have a strong understanding of the PDMP business goals and objectives as well as the PDMP software lifecycle.

PDMP Software System Functionality

There are many characteristics to PDMP software solutions: data collection, user registration, patient report dissemination, data analysis and reporting, and integration. The core PDMP software can perform some or all of these duties.

Data Collection

Data collection is the required submission of data by designated dispensers to state PDMPs. A dispenser is typically considered a pharmacy but may include some physicians as well as veterinarians who dispense controlled substances to their patients. Data collection frequency varies based on individual state law. For more information on data collection frequency, go to Maps - PDMP Policies and Capabilities - PDMP TTAC (pdmpassist.org).

- Standards

Data collected by PDMPs are submitted in the ASAP standard format. The latest version of this standard is ASAP 5.0. The standard defines the data elements as either “required,” “situational,” or “optional.” While individual state PDMPs may require a situational element, required elements will not be made “situational” in order to ensure a level of continuity across PDMPs nationwide. For more information on ASAP, visit its website.

- Methods

Data collected by PDMPs are typically done so by one of three methods: real-time transmission, batch uploads, or individual data entry.

- **Real-time transmission** involves the submission of each individual record from the PDS to the state PDMP as it is dispensed, often through the pharmacy's point-of-sale software. This method is relatively uncommon but is gaining support. Missouri, Nebraska, Oklahoma, and Utah are the only states that are collecting some or all dispensations using real-time data submission.
- **Batch uploads** are the most common methods of data submission. These occur when the dispenser uploads data for a particular time frame. For example, the dispenser may upload all records for a given day on the following day. These files are transmitted electronically through a secure data transmittal system.
- **Individual data entry** is used to enter one prescription at a time through a manual data entry process in a PDMP web portal. This is often used by very low-volume dispensers, such as a dispensing prescriber, or to correct an individual record.

- Ensuring Quality Data

PDMPs are focused on receiving quality data. To assist in ensuring the submission of quality data, PDMPs apply controls to the submitted data, which identifies errors and validates the data. This data validation is designed to identify and confirm that the information submitted to PDMPs meets a list of criteria to ensure that the ASAP standards are being met regarding file submission, data elements, the type of data (e.g., date format versus numeric format), and field length. These controls warn dispensers of potential data quality issues or reject data with known quality issues. Some examples of error codes include Dispenser DEA Invalid, DOB Irrational, Customer Last Name Blank, and NDC (National Drug Code) Not Found. These error codes can have various degrees of severity. Some records may have a warning or nonfatal error, such as an NDC is not found in the PDMP database, whereas a record would be considered an error or failed upload if the NDC field is an incorrect field length. The following is an example of error (controls) thresholds and tolerances utilized by many PDMPs:

- Examples of the types of errors employed by PDMPs:
  - **Minor—**A record is loaded within correct data in a nonvital field.
  - **Serious—**A record is loaded with missing or inappropriate data.
  - **Fatal—**A record cannot be loaded.

- Rejection of records:
  - An individual record may be rejected or, if a threshold percentage of records are rejected in an individual file, the entire file will be rejected.
  - An individual record will be rejected if it contains a fatal error.
  - An entire file will be rejected if either of the following are true:
    - More than 10 percent of the records have fatal errors.
    - More than 20 percent of the records have serious errors.

  When an entire file is rejected, **no records** in it are loaded, including those without any errors.

- Uploader Accounts

For some PDMPs, the user accounts used to upload data to the system may differ from the user accounts used to access controlled substance prescription data for a patient. Some dispensers have an account to transmit their dispenses for each pharmacy, whereas some dispensers, particularly larger chain pharmacies, will upload and correct the errors centrally for all the associated pharmacies.

- Data Storage

After data are received by the PDMP, they are stored in a format that allows for easy retrieval. Length of time of data storage must also be a consideration. States have varying laws or requirements for the length of time that PDMP data are allowed to be held and viewed by users. These laws may even have certain stipulations such as "data may only be retained for 1 year and must be de-identified after that for statistical purposes."

Patient Report Dissemination

For PDMPs, the viewing system is a portal/website that allows prescribers, dispensers and, under some circumstances, law enforcement and other users to log in to view current or prospective data. As time and technology progress, it has been shown that integrating into EHR systems allows PDMP data to be accessed in the authorized user's EHR or pharmacy system software. Integration offers ease of use and has resulted in more frequent viewing of patient reports for many PDMPs.

PDMP Portals

The web-based solutions provide patient reports and other functionality to the authorized user who has entered patient demographic information into a query request screen. The patient reports are typically presented in an HTML (webpage view) or a PDF format. These reports may

include ancillary information such as clinical alerts, information on morphine milligram equivalent (MME) calculations, multiple provider episode alerts, or overdose history.

Interstate Data Sharing

Interstate data sharing refers to the sharing of PDMP reports by one state with another state based on the request of an authorized person (e.g., practitioner, pharmacist, delegate) or an agency (e.g., regulatory boards, law enforcement). The Prescription Monitoring Information Exchange (PMIX) National Architecture is a nationwide framework designed to enable standards-based sharing of information between PDMPs and their stakeholders. PMIX is an information exchange guideline that is composed of a formal set of technical requirements that apply to state PDMP systems, data sharing "hubs," and other exchange partners or intermediaries.

A data sharing hub is a central mediation point that unites various data sources and data consumers. Data sharing hubs offer centralized governance and data flow control capabilities. There are two data sharing "hubs" currently being used by PDMPs: RxCheck and PMP InterConnect.

Integration

With the rapid increase in PDMP use, either due to the value experienced by providers or by legislative mandates, the need for easier and quicker access to PDMP data became clear. This can be conducted through integrating the PDMP within the user's normal workflow. State and federal governments recognize the benefits and importance of using the PDMP. Integration is defined as the ability to seamlessly and securely access, exchange, and use electronic health information. For PDMPs, this refers to health care providers accessing PDMP information directly within the EHR or PDS without disrupting their normal workflow. There are several models for integration that states may consider:

- The EHR/PDS connects directly to a state PDMP using its native data exchange format. The state PDMP translates the request to and response from its system into the native format.
- The EHR/PDS connects to a hub, which connects to the PDMP.
- The EHR/PDS connects to a third-party intermediary, which connects to the PDMP through a hub.
- The EHR/PDS connects to an HIE, which connects to the PDMP directly or through a hub.

When PDMPs initiate integration of their data with EHRs, HIEs, or pharmacy reporting systems, PDMPs should consider:

- Any legal agreements they need to have in place to protect the PDMP's interests.
- The availability of an audit trail available to show who has accessed PDMP data.
- The resources needed to accommodate the change in volume of requests.
- The ability to offer interstate data through the integration model.
- The resources required to provide the software capability in the PDMP and the partner system.
- The policies and procedures required to provide support to users and to manage the integration relationships.

The Office of the National Coordinator for Health Information Technology (ONC) formed the Standards and Interoperability Framework to create harmonized health IT (HIT) specifications for use throughout the United States. The ONC convened a standards coordination project to bring together the PDMP and HIT system communities to standardize data format and transport protocols to exchange patients' controlled substances prescription data between PDMP and HIT systems. This initiative focused on translating queries to and responses from PDMP and HIT native information exchange formats. The initiative produced two deliverables: a PDMP-EHR Integration Toolkit and a guide to *Non-Technical Considerations for PDMP Health IT Integration*. Additional information on this initiative can be found on the ONC's website.

The most recent project supported by the ONC is the development of an implementation guide for Health Level 7 (HL7®) Fast Healthcare Interoperable Resources (FHIR) specifications. PDMP administrators and their service providers participated in the development of this guide that allows EHRs and other systems to incorporate the HL7 specifications for broader interoperable use.

III. Resources

PDMP Capabilities

The links listed below contain a wealth of general information as well as the policies and capabilities for every PDMP. The information was primarily obtained from the PDMP administrators through TTAC's annual PDMP assessments. The information is also updated as legislation and regulations are enacted.

Individual State Profiles

General PDMP Information

- PDMP Program Status
- PDMP by Operating State Agency Type
- Drugs Monitored
- Data Collection Frequency
- Major Source of Funding

PDMP Policies and Procedures

- Mandatory Enrollment of Prescribers and Dispensers
- Listing of Mandatory Enrollment Conditions
- Mandatory Query by Prescribers and Dispensers
- Listing of Mandatory Query Conditions
- Mandatory PDMP Training of Prescribers and Dispensers
- Required Data Field—Payment Method
- Required Data Field—Positive Identification
- Release of PDMP Data for Research, Epidemiological, or Educational Purposes
- Law Enforcement PDMP Access Methods

Technology

- Interstate Data Sharing Status
- PDMP Integration Status
- Data Transmission by Pharmacies
- Data Transmission by Dispensing Practitioners
- Data Transmission by Federal Agencies
- Data Collection Entity
- ASAP Version Utilized by PDMP

PDMP Requestors

- PDMP Requestors—Health Care Entities
- PDMP Requestors—Regulatory Entities
- PDMP Requestors—Law Enforcement Entities
- PDMP Requestors—Public and Private Insurance Entities
- Solicited/Unsolicited Reports to Prescribers
- Solicited/Unsolicited Reports to Dispensers
- Solicited/Unsolicited Reports to Licensing Boards
- Solicited/Unsolicited Reports to Law Enforcement

Types of Available PDMP Reports

- Reports Available to Prescribers
- Reports Available to Dispensers
- Reports Available to Licensing Boards
- Reports Available to Law Enforcement

Funding Opportunities

Funding the operation and functions of a PDMP is an important role of a PDMP administrator.

- Ensuring continuous financial support for the PDMP requires the administrator to understand the state source of revenues and stay informed as to the potential of funding from outside sources, including the federal government. Federal agencies routinely offer grant funding to support the PDMPs. Typically, the funds must be used for a specific purpose and the grantees must periodically report progress and performance measures to the funding agency.

Below is a brief listing and description of potential funding options for PDMPs. A more comprehensive list of federal funding opportunities is available on TTAC's website.

Federal Grants

Federal grants have been essential to the establishment and improvement of PDMPs. They have been used to supplement existing state funds or bridge a gap when state funds are lacking. Grants generally do not require legislative action by a state to obtain these funds.

The foremost PDMP grant program is the HRPDMP, administered by DOJ's BJA. HRPDMP grants have been made available to states since 2003 for the purpose of planning, implementing, and enhancing PDMPs.

The Centers for Disease Control and Prevention (CDC) supports states through grants such as the Overdose Data 2 Action award.

The Substance Abuse and Mental Health Services Administration (SAMHSA) also has funding opportunities related to the prevention of prescription drug and opioid overdose-related deaths.

General Revenue Funds

General revenue funds are authorized by a state's legislature and have been the traditional funding method for PDMP operations. Most general revenue funds come from state taxes, such as sales, income, and property taxes. General revenue funds are, for the most part, the monies

state agencies depend on to administer their programs, including regulatory boards and licensing agencies, which are described below. Many state budgets also have discretionary funds built into them that, at times, have been used to fund high-priority programs.

Professional Licensing Fees

Professional licenses are granted by a licensing agency or regulatory board (e.g., Board of Medicine, Pharmacy, Dentistry, Podiatry, Veterinary Medicine, Nursing). In certain states, licensing fees fund the entire administration and operation of the agency or board and, as such, a percentage of the fees is usually allocated to the PDMP. Licensing fees provide consistent funding of the PDMP and help facilitate collaboration between licensing agencies and the PDMP when the PDMP is housed in another agency.

Controlled Substances Registration Fees

In addition to licenses issued to medical professionals authorizing them to practice within a state, several states issue a separate registration required for the prescribing and dispensing of controlled substances. This controlled substance registration is separate from the federal DEA-required registration. Registration fees provide a consistent stream of funding and can help facilitate a strong collaboration between licensing agencies and the PDMP.

Regulatory Board Funds

Funds allocated to a board (e.g., Board of Medicine, Pharmacy, Dentistry, Podiatry, Veterinary Medicine, Nursing) are generally derived from a state's general funds for the administration and operation of the board. Funding is used to regulate and oversee the medical profession specific to a board and employ staff to investigate complaints and ensure that licensees meet standards of practice.

Opioid Settlement Funds

A relatively recent source of potential financial support is opioid settlement funds. Within the agreements between states and pharmaceutical manufacturers, distributors, and chain pharmacies, most states have the ability to expend settlement funds on multiple activities, including the support of enhancements or improvements to PDMPs.

Less-common Funding Sources

- Legal settlements
- PDMP licensing fees
- Health insurance licensing fees

- Private donations
- Medicaid fraud settlements

Potential Funding Sources

- Assessed fines from disciplinary actions
- Asset forfeiture agreements with law enforcement
- Drug manufacturers' fees based on sales of controlled substances
- Prescription fees
- PDMP user fees

Grant Writing

There are numerous grant opportunities available to PDMPs from the federal government. Each grant announcement has certain criteria which must be met to receive the grant funds. PDMPs seeking federal grants should carefully review each announcement and ensure that all requirements are met. Below are links to several documents with grant-writing tips to assist when applying for these grants:

- https://www.federalgrantswire.com/writing-a-federal-grant-proposal.html#.Wjl9pzdG12E
- https://www.cdc.gov/grants/applying/tips.html
- https://grants.nih.gov/grants/grant_tips.htm
- https://www.bja.gov/publications/grantwritingmanual.pdf

State Statutes and Regulations

PDMPs have historically adopted other PDMPs' statues and regulations to develop their own legislative agendas and strategies. PDMPs should continuously monitor and stay informed to other PDMPs' laws and regulations.

TTAC maintains a database of state statutes and regulations that is continually updated. In addition, TTAC monitors PDMP-related proposed and enacted legislation and posts quarterly updates on the TTAC website; topical summaries are available upon request. See Appendix B for weblinks to each PDMP's statutes and regulations.

IV. PDMP Contacts

TTAC maintains the contact information for PDMP administrators and support personnel on its website. TTAC strives to have the most updated and accurate contact information for each PDMP program.

- State PDMP Administrators

V. Guides

Guidance Documents

The following guidance documents were created through workgroups and interviews with PDMP administrators.

- PDMP Research Requests
- Recommendations for Best Practices on Dispenser Compliance and Data Integrity
- Recommended Best Practices for Veterinary Prescriptions

Service Provider User Manuals

PDMPs manage their data uploads, error resolution, user accounts, and reporting either in-house or by contracting with a service provider. PDMPs post training materials and user guides on their websites to assist authorized data reporters and users. See Appendix C for links to the manuals currently used by the PDMPs.

ASAP Manual

The American Society for Automation in Pharmacy standard format has been in use since 1995 and is currently used by every PDMP. PDMPs may be using different versions, depending upon their state statutes, regulations, or policies. The most recently published version is 5.0, released in February 2023. The ASAP standard format organizes prescription data into segments and is transmitted as a single file or transaction. Each file or transaction is a collection of segments, and each segment is a collection of data elements or fields. There are 10 segments in the ASAP format, as follows:

- Transaction Header Segment (TH): indicates the start of a transaction and contains information related to the file.
- Information Source Segment (IS): conveys the name and identification numbers of the entity supplying the information.

- Pharmacy Header Segment (PHA): identifies information related to the pharmacy or the dispensing prescriber.
- Patient Information Segment (PAT): contains the patient's name and basic information as contained in the pharmacy record.
- Dispensing Record Segment (DSP): identifies the basic components of a dispensing of a given prescription order, including date and quantity.
- Prescriber Information Segment (PRE): identifies the prescriber of the prescription.
- Compound Drug Ingredient Detail Segment (CDI): contains information when a dispensed medication is a compound and one of the ingredients is a PDMP reportable drug.
- Additional Information Reporting Segment (AIR): contains a prescription blank serial number, information on a person dropping off or picking up the prescription, and information regarding the prescription that is not included in the other detail segments.
- Pharmacy Trailer Segment (TP): indicates the end of data for a given pharmacy and provides the total number of detail segments including for the pharmacy.
- Transaction Trailer Segment (TT): indicates the end of the transaction.

The ASAP Implementation Guide is available upon request (a fee may be charged). Visit ASAP's website for additional details.

VI. Recommendations/Considerations

This section includes information and recommendations on several varied topics that PDMP administrators may wish to consider, including important meetings or conferences relevant to an administrator's work, staffing recommendations, and some program innovations that may be of interest to administrators.

Conferences/Meetings

BJA Harold Rogers PDMP National Meeting

The BJA Harold Rogers PDMP National Meeting assists government agencies and partnering organizations to better understand PDMPs, their capabilities, interstate data sharing, and how stakeholders and policymakers can collaborate to use PDMPs to address the issues of prescription drug misuse and diversion most efficiently. The meeting is open to anyone who would like to attend, and there is no registration fee.

BJA COSSUP National Forum

The BJA Comprehensive Opioid, Stimulant, and Substance Use Program (COSSUP) focuses on tackling one of the most critical challenges of our time: ending America's opioid, stimulant, and substance use crisis. This meeting brings together grantees, federal partners, and invited guests from across the country in the fight against this crisis. The meeting is open to anyone who would like to attend, and there is no registration fee.

PDMP TTAC Regional Meetings

PDMP TTAC typically hosts two regional meetings per year and encourages attendance from each state/territory/district in the region. The regional meetings provide a great opportunity to meet, collaborate, and strategize with fellow PDMP administrators in the same geographic region, as well as obtain information on what is happening with PDMPs both nationally and locally.

National Rx Drug Abuse & Heroin Summit

The National Rx Drug Abuse & Heroin Summit is the largest national collaboration of professionals from local, state, and federal agencies, businesses, academia, treatment providers, and allied communities impacted by prescription drug misuse and heroin use. It is *the* event for decision makers and allied professionals working to address this public health emergency. The summit is now the annual gathering for stakeholders to discuss what is working in prevention and treatment. Notable speakers in past years have included President Barack Obama in 2016 and U.S. Department of Health and Human Services (HHS) Secretary Tom Price in 2017.

National Association of State Controlled Substances Authorities (NASCSA)

The National Association of State Controlled Substances Authorities (NASCSA) provides an annual conference for the exchange of ideas, information, and views on legal and regulatory issues relating to controlled substances and educational opportunities and information to persons responsible for the legislation, regulation, and enforcement of controlled substances laws and regulations through various methods, such as publications, resolutions, model acts, and surveys.

PDMP Staffing

Currently, the average staff size for PDMPs is 6.5 employees (median is 5.25 employees); however, 13 PDMPs operate with 2 or fewer staff members. There are a variety of positions that a state may have related to the PDMP. Available state resources often dictate which positions are filled. Below is an alphabetical listing of possible positions associated with PDMPs.

- **Business Analyst:** A business analyst analyzes the business owner's or the customer's needs, business model, and processes and assesses integration with technology. A business analyst bridges the business and technology world, acting as an interpreter or liaison for both sides. Business analysts will document business, functional, and technology requirements.
- **Data Analyst:** A data analyst compiles and analyzes data contained in a database. Some of these individuals are found within the public health or epidemiology departments. Data analysts are often charged with data quality, data validation and scrubbing, data standardization, data normalization, statistical analysis, and trending. Some data analysts for PDMP systems may be responsible for management of tools, such as the Statistical Analysis System (SAS), and/or for the development and maintenance of patient-matching algorithms. A data analyst often requires a higher skill level than a report writer.
- **Database Administrator:** A database administrator oversees the data repository of the PDMP. Their tasks include inserting, updating, and removing data as well as maintaining a strong level of database security, writing queries, and granting IT resources access to the data. A database administrator should have a vast knowledge of the querying language as well as an understanding of the language used by the data analyst, such as Python and/or SAS. Most databases in use are Microsoft SQL; extensive knowledge of this platform may typically be required.
- **Developer:** A developer works mainly on the coding of the website and other PDMP projects, such as EHR integration. A developer will need programming skills as well as an understanding of the internal workings of the PDMP infrastructure. Developers can also be responsible for the security aspects of the web code written. Most developers will program in languages such as .NET, Java, Hypertext Preprocessor (PHP), and/or HyperText Markup Language (HTML).
- **Help Desk Support:** A help-desk-support employee answers phone calls and emails from users. While these phone calls are normally about PDMP access, such as forgotten usernames and passwords, they can also be about regulatory questions, such as new laws.
- **Program Manager:** A program manager is responsible for the development and direction of the program, which may include the development and implementation of policies and procedures. Program managers set program direction, recommend program policies and procedures, and oversee program operations. Generally, program managers hire and direct support staff members. Program managers ensure program quality, integrity, and compliance with state and federal rules and requirements. They work to establish and promote relationships and partnerships with other programs, departments, stakeholders, legislation, and the public.

- **Project Manager:** A technology project manager has the responsibility for planning, procurement, and execution of projects. A project manager acts as the client representative to technology resources and as the technology representative to business resources. A project manager is responsible for the management of resources, budgets, and timelines. In the PDMP software system arena, project managers often fill the dual role of project manager and product manager.
- **Report Writer:** A report writer writes queries to extract data and publish standard and ad hoc reports for users and business owners. A report writer may use tools such as Structured Query Language (SQL) Server Report Services, Crystal Reports, Business Objects, and Tableau to extract data and publish reports. Report writers require experience in requirements analysis to develop strategies to meet the user's or business owner's information needs, as well as skills in the presentation of information.
- **Server Administrator:** A server administrator oversees the aspects of the PDMP server. This includes scheduling website updates, upgrading server software, and handling security. A server administrator should have a vast knowledge of the server architecture and operating system as well as the web server and database software. While a cursory understanding of the languages known by the developers and database administrators is preferred, languages such as C, Perl, and/or Shell are necessary.
- **Support Staff/Information Coordinator:** A support staff/information coordinator advises users on how to obtain or submit information to the PDMP. They serve as the help desk for system-related inquires or problems and maintain contact with pharmacies to update, resolve issues, or correct database errors. They provide reports as requested by users. Individuals in this position are considered the program experts in day-to-day operations. They train users on system usage and work with the program manager to develop program-related training.

PDMP Innovations

PDMPs are constantly evolving and incorporating new ideas into their programs. Many of the innovations are put in place through statutory authority in an attempt to curb the prescription drug epidemic and improve health care in the United States. Below are links to presentations detailing a variety of recent PDMP innovations.

- Drug Utilization Review and Clinical Alerts Project – Florida
- PDMP Insight Business Intelligence (BI) Architecture – Florida
- Analysis to Drive Educational Initiatives – Illinois
- Outlier Modules for Investigations and Education – Kansas
- Analytics to Advise Interstate Data Sharing – Kentucky

- Substance Use Disorder Focused Master Data Repository – Maine
- Early Intervention Program – Ohio
- Controlled Drug Shipment Data Reporting – Tennessee
- Incorporating Alternate Data With the PDMP – Utah
- Opioid and Overdose Response Plan – Washington

VII. Frequently Asked Questions

To alleviate the number of telephone calls and emails from PDMP customers and stakeholders, PDMPs have developed Frequently Asked Questions (FAQs) webpages. Answering commonly asked questions through an effective FAQ presence on the PDMP's website redirects valuable staff time for other activities and provides immediate information. Appendix D contains examples of questions and responses from these pages. The questions are grouped into several categories: General, Access, Use, Dispenser, Delegates, Privacy, and Training. PDMP administrators are encouraged to review the questions to determine which are applicable and customize responses per their state's laws, regulations, and policies.

VIII. Acronyms and Definitions

The following is a compilation of acronyms and terms used by and for PDMPs. Additional information may be found in the ONC Health IT Playbook glossary.

- *AATOD (American Association for the Treatment of Opioid Dependence)*

  AATOD was founded in 1984 to enhance the quality of patient care in treatment programs by promoting the growth and development of comprehensive methadone treatment services throughout the United States.

- *ARCOS (Automation of Reports and Consolidative Order System)*

  ARCOS is an automated, comprehensive drug reporting system operated by DEA. ARCOS is designed to monitor the flow of controlled substances and provides comprehensive tracking beginning at the manufacturer and ending with dispensing.

- *ASAP (American Society for Automation in Pharmacy)*

  ASAP is a national organization that develops reporting standards for pharmacies and other dispensers to report prescription data to PDMPs.

- *ATTC (Addiction Technology Transfer Center)*

  The ATTC develops and strengthens the workforce that provides addictions treatment and recovery services to those entering the treatment system. The ATTC network consists of 14 regional centers and a national office.

- *Authentication*

  The process of verifying the identity and credentials of a person before authorizing access to prescription data.

- *BJA (Bureau of Justice Assistance)*

  BJA is a component of the Office of Justice Programs (OJP), DOJ. BJA supports law enforcement, courts, corrections, treatment, victim services, technology, and prevention initiatives that strengthen the nation's criminal justice system.

- *CDC (Centers for Disease Control and Prevention)*

  The CDC is one of the major operating components of HHS. The CDC's mission is to collaborate to create the expertise, information, and tools that people and communities need to protect their health—through health promotion, prevention of disease, injury and disability, and preparedness for new health threats.

- *CMS (Centers for Medicare and Medicaid Services)*

  CMS is a federal agency within HHS that administers the Medicare program and works in partnership with state governments to administer Medicaid, the State Children's Health Insurance Program (SCHIP), and health insurance portability standards. In addition to these programs, CMS has other responsibilities, including the administrative simplification standards from the Health Insurance Portability and Accountability Act of 1996 (HIPAA), quality standards in long-term care facilities (more commonly referred to as nursing homes) through its survey and certification process, clinical laboratory quality standards under the Clinical Laboratory Improvement Amendments, and oversight of HealthCare.gov.

- *Controlled Substances*

  Certain drugs or substances whose possession and use are regulated by the federal Controlled Substances Act—21 Code of Federal Regulations (CFR) Part 1300—and state law because of their potential for misuse and diversion. States may impose their own determination of which drugs are controlled substances by statute. For example,

tramadol (before it was reclassified to the controlled substance category by DEA) was classified as a controlled substance by many states.

- *Controlled Substance Schedule*

  A controlled substance schedule is a hierarchy of classification of controlled substances determined by DEA. Schedules are designated by Roman numerals I, II, III, IV, and V. A Schedule I controlled substance is a substance with no legitimate medical purpose that has the highest potential for physiological and psychological dependence. Illicit drugs, such as crack cocaine, MDMA, methamphetamine, and heroin, are contained in this schedule. Schedules II, III, IV, and V drugs have a legitimate medical purpose and have descending potential for misuse. Schedule II is the highest of this group and Schedule V is the lowest.

- *CSAT (Center for Substance Abuse Treatment)*

  CSAT is part of SAMHSA, within HHS. CSAT promotes the quality and availability of community-based substance misuse treatment services for individuals and families who need them. CSAT works with states and community-based groups to improve and expand existing substance misuse treatment services under the Substance Abuse Prevention and Treatment Block Grant Program. CSAT also supports SAMHSA's free treatment referral service to link people with the community-based substance misuse services they need.

- *CSG (Council of State Governments)*

  CSG is the nation's only organization serving all three branches of state government. CSG is a region-based forum that fosters the exchange of insights and ideas to help state officials shape public policy.

- *DAWN (Drug Abuse Warning Network)*

  DAWN is a public health surveillance system that monitors drug-related hospital emergency department visits and drug-related deaths to track the impact of drug use and misuse in the United States. The DAWN system is operated and managed by SAMHSA.

- *DEA (U.S. Drug Enforcement Administration)*

  DEA is within DOJ. The mission of DEA is to (1) enforce the controlled substance laws and regulations of the United States and bring to the criminal and civil justice systems of the United States, or any other competent jurisdiction, those organizations and principal members of organizations involved in the growing, manufacture, or distribution of

controlled substances appearing in or destined for illicit traffic in the United States; and (2) recommend and support nonenforcement programs aimed at reducing the availability of illicit controlled substances on the domestic and international markets.

- *Dispensers*

  Dispensers are entities designated by state law that must submit prescription data to the PDMP for drugs they have dispensed. Dispensers may include pharmacies (both in-state and out-of-state), hospitals for outpatient use, dispensing prescribers (including veterinarians), and correctional facilities.

- *DOJ (U.S. Department of Justice)*

  DOJ's mission is to enforce the law and defend the interests of the United States according to the law; ensure public safety against threats foreign and domestic; provide federal leadership in preventing and controlling crime; seek just punishment for those guilty of unlawful behavior; and ensure fair and impartial administration of justice for all Americans.

- *FDA (U.S. Food and Drug Administration)*

  The FDA is the federal agency charged with protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices; ensuring the safety of foods, cosmetics, and radiation-emitting products; and regulating tobacco products. The FDA is responsible for classifying and determining the appropriate schedule for all regulated drugs in the United States.

- *FHIR (Fast Healthcare Interoperability Resources)*

  FHIR is a next-generation interoperability standard created by the standards development organization HL7®. FHIR is designed to enable health data, including clinical and administrative data, to be quickly and efficiently exchanged. FHIR's application programming interface (API) is a representational state transfer (REST) approach to data exchange. REST defines categories of data, or "resources," to exchange data. The philosophy behind FHIR is to create a set of resources that, individually or in combination, satisfy most common use cases. The patient resource, for example, includes demographic data related to a patient, such as their name, address, and phone number. Resources also improves granular data retrieval, so that a request returns just the relevant data rather than a full record or document that itself must then be searched.

- *FSMB (Federation of State Medical Boards)*

  FSMB is a national nonprofit representing the 70 medical and osteopathic boards of the United States and its territories. Since its founding, FSMB has grown in the range of services it provides—from assessment tools to policy documents, from credentialing to disciplinary alert services—while continuing to serve the interests of its member boards. The ultimate objective is to promote excellence in medical practice, licensure, and regulation as the national resource and voice on behalf of state medical boards in their protection of the public.

- *FTP (File Transfer Protocol)*

  An FTP is a standard network protocol used for the transfer of computer files between a client and a server on a computer network. See also *SFTP*.

- *GAO (U.S. Government Accountability Office)*

  GAO is an independent, nonpartisan agency that works for Congress. Often called the "congressional watchdog," GAO investigates how the federal government spends taxpayer dollars. The head of GAO, the Comptroller General of the United States, is appointed to a 15-year term by the President from a slate of candidates whom Congress proposes.

- *HHS (Department of Health and Human Services)*

  HHS is the U.S. government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves. HHS administers the Medicare program, the nation's largest health insurer, handling more than one billion claims per year.

- *HIPAA (Health Insurance Portability and Accountability Act)*

  HIPAA is a federal law enacted in 1996 that provides federal protections for personal health information held by covered entities and gives patients an array of rights with respect to that information. At the same time, HIPAA is balanced so that it permits the disclosure of personal health information needed for patient care and other important purposes. PDMPs are not considered covered entities under HIPAA.

- *HL7 (Health Level 7)*

  HL7 is a not-for-profit organization that develops a set of international standards for the exchange, integration, sharing, and retrieval of electronic health information

that supports clinical practice and the management, delivery, and evaluation of health services.

- *HRPDMP (Harold Rogers Prescription Drug Monitoring Program)*

  The HRPDMP is administered by DOJ, OJP, BJA. The HRPDMP provides three categories of grants: planning, implementation, and enhancement. To be eligible for funding, the state must already have a statute or regulation permitting the establishment of a PDMP.

- *IHS (Indian Health Service)*

  IHS is an agency within HHS that is responsible for providing federal health services to American Indians and Alaska Natives. The provision of health services to members of federally recognized tribes grew out of the special government-to-government relationship between the federal government and Indian tribes.

- *IJIS (Integrated Justice Information Systems Institute)*

  IJIS is a nonprofit membership organization dedicated to joining forces with its member companies to unite the private and public sectors for improving mission-critical information sharing. IJIS is funded by its members and by grants from DOJ, BJA, and the U.S. Department of Homeland Security.

- *Integration*

  Integration is the process of enabling medical records to seamlessly be accessed across electronic software solutions.

- *Interstate Data Interoperability*

  Interstate data interoperability is the sharing of PDMP reports by one state with another state based on the request of an authorized person (e.g., practitioner, pharmacist) or agency (e.g., regulatory boards, law enforcement).

- *Legend Drug*

  A legend drug is a medication approved by the FDA that is required by federal or state law to be dispensed to an ultimate user pursuant to a prescription from a licensed practitioner.

- *Medication Reconciliation*

  Medication reconciliation is the process of creating the most accurate list possible of all medications a patient is taking—including drug name, dosage, frequency, and route of administration—and comparing that list against the physician's admission, transfer, and/or discharge orders, with the goal of providing correct medications to the patient at all transition points within the hospital and the continuum of care.

- *Model Act (Prescription Drug Monitoring Program Model Act)*

  The Model Act, prepared by PDMP TTAC, provides a statutory framework for establishing and operating a PDMP. It also provides a framework for states with existing PDMPs to update their statutes. The Model Act is a consensus document that reflects the best practices of the states that currently run PDMPs as well as the knowledge of other states that have a long-standing interest in PDMPs.

- *NABP (National Association of Boards of Pharmacy)*

  NABP is a 501(c)(3) nonprofit association that protects public health by assisting its member boards of pharmacy and offers programs that promote safe pharmacy practices for the benefit of consumers. NABP is the independent, international, and impartial association that assists its member boards and jurisdictions for the purpose of protecting the public health.

- *NASCSA (National Association of State Controlled Substance Authorities)*

  NASCSA has a primary purpose to provide a continuing mechanism through which state and federal agencies, as well as others, can work to increase the effectiveness and efficiency of state and national efforts to prevent and control drug diversion and misuse, and to provide an educational forum to further this purpose.

- *NCPDP (National Council for Prescription Drug Programs)*

  NCPDP is an American National Standards Institute (ANSI)-accredited organization providing standards for electronic health care transactions used in prescribing, dispensing, monitoring, managing, and paying for medications and pharmacy services.

- *NCSL (National Conference of State Legislatures)*

  NCSL is a bipartisan organization that serves the legislators and staff of the nation's 50 states, its commonwealths, and its territories. NCSL provides research, technical

assistance, and opportunities for policymakers to exchange ideas on the most pressing state issues.

- *NDC (National Drug Code)*

  Federal law requires that drug products be identified and reported by drug manufacturers to the FDA using a unique, three-segment number called the National Drug Code (NDC), which is a universal product identifier for human drugs. The FDA inputs the full NDC and the information submitted as part of the listing process into a database known as the Drug Registration and Listing System (DRLS). Each listed drug product is assigned a unique 10-digit, 3-segment number. This NDC identifies the labeler, product, and trade package size.

- *NSDUH (National Survey on Drug Use and Health)*

  NSDUH provides national- and state-level data on the use of tobacco, alcohol, and illicit drugs (including nonmedical use of prescription drugs), as well as mental health, in the United States. NSDUH is sponsored by SAMHSA, an agency of the U.S. Public Health Service in HHS.

- *OJP (Office of Justice Programs)*

  OJP provides innovative leadership to federal, state, local, and tribal justice systems by disseminating state-of-the art knowledge and practices across America and providing grants for the implementation of these crime-fighting strategies. Because most of the responsibility for crime control and prevention falls to law enforcement officers in states, cities, and neighborhoods, the federal government can be effective in these areas only to the extent that it can enter into partnerships with these officers. Therefore, OJP does not directly carry out law enforcement and justice activities. Instead, OJP works in partnership with the justice community to identify the most pressing crime-related challenges confronting the justice system and to provide information, training, coordination, and innovative strategies and approaches for addressing these challenges.

- *ONC (Office of the National Coordinator for Health Information Technology)*

  ONC is the principal federal entity within HHS charged with coordination of nationwide efforts to implement and use the most advanced health IT and the electronic exchange of health information. The position of national coordinator was created in 2004, through an executive order, and legislatively mandated in the Health Information Technology for Economic and Clinical Health Act (HITECH Act) of 2009.

- *ONDCP (Office of National Drug Control Policy)*

  ONDCP is a component of the Executive Office of the President. The principal purpose of ONDCP is to establish policies, priorities, and objectives for the nation's drug control program. The goals of the program are to reduce illicit drug use, manufacturing, and trafficking; drug-related crime and violence; and drug-related health consequences.

- *Opioids*

  Opioids are pain-reducing drugs that are chemically or structurally similar to opium and interact with mu opioid receptors in the brain and body, producing morphine-like effects. Opioids include legal prescription drugs such as morphine, fentanyl, hydrocodone, and oxycodone as well as illegal opioids such as heroin.

- *OTC (Over-the-Counter)*

  An OTC drug is a drug that is deemed by the FDA as safe and effective for use by the general public without supervision or treatment by a health professional and does not require a prescription.

- *Part 2 (42 CFR Part 2)*

  Part 2 of 42 CFR sets out federal regulations through SAMHSA that serve to protect patient records created by federally assisted programs for the treatment of substance use disorders (SUDs).

- *PDMP (Prescription Drug Monitoring Program)*

  A PDMP is a state-administered system of collecting, monitoring, and disseminating information regarding dispensed controlled substances, such as opioids, benzodiazepines, stimulants, and other selected prescription drugs (drugs of concern).

- *PMP (Prescription Monitoring Program)*

  The term "PMP" is used interchangeably by some states/organizations with "PDMP" (see *PDMP*). It is also used in some unrelated venues to mean "project management professional."

- *PMP Gateway*

  The PMP Gateway connects to PMP Interconnect, providing an interface for health care providers to query patient prescription data.

- *PMPi (NABP PMP InterConnect®)*

  PMPi facilitates the transfer of PDMP data across state lines. It allows participating state PDMPs across the United States to be linked, providing a more effective means of combating drug diversion and drug misuse nationwide.

- *PMIX (Prescription Monitoring Information Exchange)*

  The PMIX National Architecture is a formal set of technical requirements that existing and future interstate data hubs need to comply with to enable hub-to-hub communication. A critical component of the architecture is the use of open standards (IT design elements that are in the public domain and available free of charge). Adopting open standards helps ensure a state's ability to remain flexible and reduce costs.

- *Prescribers*

  Prescribers are those who have authority under state or federal law to prescribe controlled substances and other drugs based on state requirements and are typically the group that requests the most reports from a PDMP. This group can include medical doctors, osteopathic doctors, nurse practitioners, physician assistants, dentists, veterinarians, naturopathic doctors, optometrists, and podiatrists.

- *RxCheck Hub*

  The RxCheck Hub is the baseline implementation of the PMIX Architecture and is owned and operated by BJA to create an operational data sharing hub to implement the PMIX specifications and to deliver a functional interoperability solution for interstate data sharing and PDMP integration. The RxCheck Governance Board (composed of states connected to the RxCheck Hub, or with plans to connect) provides guidance, stewardship, and leadership.

- *SAMHSA (Substance Abuse and Mental Health Services Administration)*

  SAMHSA is a branch of HHS and oversees the National All Schedules Prescription Electronic Reporting (NASPER) grant program. SAMHSA's mission is to lead public health and service delivery efforts that promote mental health, prevent substance misuse, and provide treatments and supports to foster recovery while ensuring equitable access and

better outcomes. SAMHSA is the agency responsible for the rules pertaining to 42 CFR Part 2.

- *SFTP (Secure File Transfer Protocol)*

  SFTP (also referred to as "SSH [Secure Shell] File Transfer Protocol") provides secure and encrypted file transfer and manipulation functionality over any reliable data stream.

- *Solicited Reporting*

  A product or feature of a PDMP where PDMP data is provided to an authorized user in the form of a report based upon the user's request for the information from the PDMP. The reports can be produced through an automated online system or manually by PDMP staff. Entities that receive these reports can include prescribers, dispensers, law enforcement, and regulatory boards.

- *SSL (Secure Sockets Layer)*

  SSL is a cryptographic protocol that provides secure communications for data transfers.

- *TTAC (Training and Technical Assistance Center)*

  TTAC is funded by BJA to provide a comprehensive array of services, support, resources, and strategies to PDMPs, federal partners, and other stakeholders to further the efforts and effectiveness of PDMPs.

- *UCF (Universal Claim Form)*

  A UCF is an electronic form used by a pharmacy that has internet access to submit pharmacy claims to a payer or pharmacy benefit manager. For the purposes of a PDMP, it refers to a module within the PDMP web portal for dispensers to submit a dispensation to the PDMP through a manual entry process when the dispenser is unable to submit its data in a batch upload.

- *Unsolicited Reporting (also known as proactive reporting or unsolicited alerts)*

  A product of a PDMP where prescription information is analyzed by PDMP staff and questionable activities are then reported to appropriate personnel based on thresholds established by the PDMP. Entities that receive these reports can include prescribers, dispensers, law enforcement, and regulatory boards.

Appendix A—PDMP Effectiveness Literature Review

In general, results from recent studies on PDMP effectiveness indicate that they play a role in reducing the following outcome measures:

(1) High-risk opioid prescribing and dispensing behaviors

(2) Overall supply of opioid prescriptions

(3) Multiple provider episodes (e.g., doctor/pharmacy shopping)

(4) Opioid-related overdose rates

(5) Admissions to treatment facilities for prescription drug misuse

However, some of the positive findings are dependent on certain PDMP-related policies or practices (e.g., laws requiring prescribers to use the PDMP system). In addition, interpretation of any study results should consider the data source, the study design, the study population, and measurements of the outcome and predictor variables.

The following are key findings from selected studies for each of the five outcome measures:[1]

PDMPs' Effect on High-risk Prescribing and Dispensing Behaviors

- In a study of privately insured adults (aged 18–64) who had at least one opioid prescription between 2011 and 2015, states with a "comprehensive" mandate for providers to query the PDMP were associated with a 9.2 percent reduction in the probability of overlapping opioid prescriptions, a 6.6 percent reduction in the probability of having three or more opioid prescribers, and an 8 percent reduction in the probability of having overlapping opioid and benzodiazepine prescriptions. **Bao, Y., Wen, K., Johnson, P., Jeng, P. J., Meisel, Z. F., and Schackman, B. R. (2018). "Assessing the Impact of State Policies for Prescription Drug Monitoring Programs on High-risk Opioid Prescriptions."** ***Health Affairs*** **37(10): 1596–1604.**

[1] Percentages reported are statistically significant.

- In a study of Medicare Part D enrollees, states with any type of mandate for providers to query a PDMP by 2013—states with a "must use" law—were associated with a 2.4 percent decline in the share of enrollees who were prescribed opioids, a 6 percent decline in the share of patients who were prescribed opioids with overlapping claims for the same drug, and a 5 percent decline in the share with more than a 7-month supply. **Buchmueller, T. C., and Carey, C. (2018). "The Effect of Prescription Drug Monitoring Programs on Opioid Utilization in Medicare."** ***American Economic Journal: Economic Policy*** **10(1): 77–112.**
- In a study of patients with chronic non-cancer pain, state PDMPs implemented by 2012 were not associated with physicians' patterns of opioid prescribing for the treatment of non-cancer chronic pain treatment. The study also found no association in mandatory PDMP use or registration laws in physicians' opioid-prescribing patterns. **Lin, H. C., Wang, Z., Boyd, C., Simoni-Wastila, L., and Buu, A. (2018). "Associations Between Statewide Prescription Drug Monitoring Program (PDMP) Requirement and Physician Patterns of Prescribing Opioid Analgesics for Patients With Non-cancer Chronic Pain."** ***Addictive Behaviors*** **76: 348–354.**
- Researchers used state PDMP data to examine the effect of these mandates on prescriber registration, use of the PDMP, and prescription-based measures of patient risk in three states—Kentucky, Ohio, and West Virginia—that implemented mandates between 2010 and 2015. They conducted comparative interrupted time series analyses to examine changes in outcome measures after the implementation of mandates in the mandate states compared to control states. They found that mandatory use laws increased prescriber registration and utilization of the PDMP in the mandate states compared to controls. The multiple provider episode rate, the rate of opioid prescribing, the rate of overlapping opioid prescriptions, and the rate of overlapping opioid/benzodiazepine prescriptions decreased in Kentucky and Ohio. Nevertheless, the magnitude of changes in these measures varied among mandate states. These findings indicate that PDMP mandates have the potential to reduce risky opioid-prescribing practices. Variation in the laws may explain why the effectiveness varied between states. **Strickler, G. K., Zhang, K., Halpin, J. M., Bohnert, A. S. B., Baldwin, G., and Kreiner, P. W. (2019). "Effects of Mandatory Prescription Drug Monitoring Program (PDMP) Use Laws on Prescriber Registration and Use and on Risky Prescribing."** ***Drug and Alcohol Dependence*** **199: 1–9.**

PDMPs' Effect on the Supply of Opioid Prescription Drugs

- In a national study of opioid prescription drugs dispensed between 2006 and 2013, states with a law mandating PDMP use, combined with pain clinic legislation, were associated with an 8 percent decrease in the quantity of opioids dispensed. **Dowell, D., Zhang, K., Noonan, R. K., and Hockenberry, J. M. (2016). "Mandatory Provider Review and Pain Clinic Laws Reduce the Amounts of Opioids Prescribed and Overdose Death Rates."** ***Health Affairs*** **35(10): 1876–1883.**
- In a nationally representative survey of physicians at community health centers during 2001–2010, a study found that states that implemented online access to PDMP information for providers were associated with a 32.7 percent reduction in the rate of Schedule II opioid prescription drugs. This effect was sustained in the second and third years after the implementation of an online PDMP system. **Bao, Y., Pan, Y., Taylor, A., Radakrishnan, S., Luo, F., Pincus, H. A., and Schackman, B. R. (2016). "Prescription Drug Monitoring Programs Are Associated With Sustained Reductions in Opioid Prescribing by Physicians."** ***Health Affairs*** **35(6): 1045–1051.**
- In a study of Medicaid enrollees, states with mandatory PDMP registration or use laws during 2011–2014 were associated with a reduction of 9 to 10 percent in the numbers of Schedule II opioid prescriptions. **Wen, H., Schackman, B. R., Aden, B., and Bao, Y. (2017). "States With Prescription Drug Monitoring Mandates Saw a Reduction in Opioids Prescribed to Medicaid Enrollees."** ***Health Affairs*** **36(4): 733–741.**
- A study of Ohio's comprehensive mandatory PDMP use law found that mandatory use of a PDMP was associated with a decrease in the quantity of dispensed opioids (by 8.9 percent) and benzodiazepines (by 7.5 percent) after the law went into effect in April 2015. **Winstanley, E. L., Zhang, Y., Mashni, R., Schnee, S., Penm, J., Boone, J., McNamee, C., and MacKinnon, N. J. (2018). "Mandatory Review of a Prescription Drug Monitoring Program and Impact on Opioid and Benzodiazepine Dispensing.** ***Drug and Alcohol Dependence*** **188: 169–174.**
- In a study of disabled and older adult Medicare enrollees across 10 states during 2007–2012, PDMP implementation was associated with reduced opioid volume measured as the total kilogram weight dispensed. **Moyo, P., Simoni-Wastila, L., Griffin, B. A., Onukwugha, E., Harrington, D., Alexander, G. C., and Palumbo, F. (2017). "Impact of Prescription Drug Monitoring Programs (PDMPs) on Opioid Utilization Among Medicare Beneficiaries in 10 U.S. States."** ***Addiction*** **112(10): 1784–1796.**

- In a study using Medicare Part D prescribing data during 2010–2013, PDMPs were associated with a 5.2 percent decrease in the days' supply per physician for oxycodone, which represents 83.6 fewer days supplied or slightly less than three 30-day oxycodone prescriptions per physician. PDMPs were associated with a 2.8 percent decrease in hydrocodone, which represents 53.1 fewer days supplied per physician. Although these are considered relatively small effects, the reductions were significant. **Yarbrough, C. R. (2018). "Prescription Drug Monitoring Programs Produce a Limited Impact on Painkiller Prescribing in Medicare Part D."** ***Health Services Research*** **53(2): 671–689.**

Reducing Multiple Provider Episodes

- A study of Ohio's mandatory PDMP use law found declining numbers of multiple provider episodes (measured as a patient receiving an opioid and/or benzodiazepine prescription from five or more prescribers at five or more pharmacies within a 6-month period) involving benzodiazepines (45 percent), opioids (63 percent), and opioids or benzodiazepines (61 percent) from 2015 to 2016. **Winstanley, E. L., Zhang, Y., Mashni, R., Schnee, S., Penm, J., Boone, J., McNamee, C., and MacKinnon, N. J. (2018). "Mandatory Review of a Prescription Drug Monitoring Program and Impact on Opioid and Benzodiazepine Dispensing.** ***Drug and Alcohol Dependence*** **188: 169–174.**
- In a study of Medicare Part D enrollees, states with mandatory PDMP use laws had an 8 percent decline in the share of enrollees obtaining opioids from five or more prescribers and a 16 percent decline for five or more pharmacies. **Buchmueller, T. C., and Carey, C. (2018). "The Effect of Prescription Drug Monitoring Programs on Opioid Utilization in Medicare."** ***American Economic Journal: Economic Policy*** **10(1): 77–112.**

Reducing Opioid-related Fatal Overdoses

- In a national study of opioid-related overdose deaths during 1999–2013, a state's PDMP implementation was associated with an average reduction of 1.12 deaths per 100,000 population in the year after implementation. States with certain characteristics, such as monitoring greater numbers of drugs with misuse potential and updating their data at least weekly, had greater reductions in deaths, compared to states whose programs did not have these characteristics. **Patrick, S. W., Fry, C. E., Jones, T. F., and Buntin, M. B. (2016). "Implementation of Prescription Drug Monitoring Programs Associated With Reductions in Opioid-related Death Rates."** ***Health Affairs*** **35(7): 1324–1332.**

- In a national study, states with combined implementation of mandated PDMP use laws and pain clinic laws by 2013 were associated with a reduction in prescription opioid-involved overdose death rates by 12 percent. **Dowell, D., Zhang, K., Noonan, R. K., and Hockenberry, J. M. (2016). "Mandatory Provider Review and Pain Clinic Laws Reduce the Amounts of Opioids Prescribed and Overdose Death Rates."** ***Health Affairs*** **35(10): 1876–1883.**
- In a national study of drug overdose mortality rates from 1999 to 2014, the mere implementation of a PDMP was not associated with reductions in overall fatal drug overdose or prescription opioid overdose rates relative to expected rates in the absence of PDMPs. **Nam, Y. H., Shea, D. G., Shi, Y., and Moran, J. R. (2017). "State Prescription Drug Monitoring Programs and Fatal Drug Overdoses."** ***American Journal of Managed Care*** **23(5): 297–303.**
- Researchers from New York University partnered with researchers largely based in California for a series of recent studies exploring PDMP heterogeneity—both the effects of differing PDMP characteristics and differing effects of PDMPs on different populations. In an analysis of PDMP policies across states and over time, from 1999 to 2016, these researchers developed a typology of PDMPs centered on three intervals (1999–2004, 2005–2009, and 2010–2016), which included three PDMP classes in each interval that tended toward greater robustness over the intervals (Smith et al., 2019). The researchers found, for example, that in the third interval, PDMPs could be characterized as "weak" (reactive), "cooperative" (likely to share PDMP data with other states and to report more federal drug schedules), and "proactive" (likely to provide unsolicited reports to PDMP users or to provide open access to law enforcement). Opioid overdose deaths in prior years predicted the state's PDMP class but did not predict transitions between classes over time. **Cerda, M., Ponicki, W. R., Smith, N., Rivera-Aguirre, A., Davis, C. S., Marshall, B. D. L., Fink, D. S., Henry, S. G., Castillo-Carniglia, A., Wintemute, G. J., Gaidus, A., Gruenewald, P. J., and Martins, S. S. (2020). "Measuring Relationships Between Proactive Reporting State-level Prescription Drug Monitoring Programs and County-level Fatal Prescription Opioid Overdoses."** ***Epidemiology*** **31(1): 32–42.**
- The researchers used this typology in two further studies. In one, they found that state adoption of PDMPs was associated with fewer prescription opioid overdose deaths overall, while proactive PDMPs in particular were associated with fewer deaths related to natural/semisynthetic opioid and methadone—the targets of these programs (Cerda et al., 2020). **Martins, S. S., Ponicki, W., Smith, N., Rivera-Aguirre, A., Davis, C. S., Fink, D. S., Castillo-Carniglia, A., Henry, S. G., Marshall, B. D. L., Gruenewald, P., and Cerda, M. (2019). "Prescription Drug Monitoring Programs Operational Characteristics and Fatal Heroin Poisoning."** ***International Journal of Drug Policy*** **74: 174–180.**

- In a related study, these researchers reported that (1) adoption of a PDMP was associated with increased heroin poisoning rates (22 percent increase by third year post-adoption); (2) in the 2010–2016 interval, states with "cooperative" PDMPs had 19 percent higher heroin-poisoning rates than states with "weak" PDMPs; and (3) in the same interval, states with "proactive" PDMPs had 6 percent lower heroin-poisoning rates than states with no or "weak" PDMPs (Martins et al., 2019). **Puac-Polanco, V., Chihuri, S., Fink, D. S., Cerda, M., Keyes, K. M., and Li, G. (2020). "Prescription Drug Monitoring Programs and Prescription Opioid-related Outcomes in the United States."** ***Epidemiologic Reviews*** **42(1): 134–153.**
- Finally, in a study examining possible differential effects of PDMPs at the county level, a team of these researchers found, in 2010–2014, that online PDMPs were associated with 26 percent lower rates of prescription opioid-related hospitalizations and with lower rates of heroin-related hospitalizations that tended to increase in later years (Castillo-Carniglia et al., 2019). Counties with lower rates of non-cancer pain conditions experienced a smaller decrease in prescription opioid overdose and a faster increase in heroin overdoses. No differences were found across different county levels of poverty and unemployment. **Smith, N., Martins, S. S., Kim, J., Rivera-Aguirre, A., Fink, D. S., Castillo-Carniglia, A., Henry, S. G., Mooney, S. J., Marshall, B. D. L., Davis, C., and Cerda, M. (2019). A Typology of Prescription Drug Monitoring Programs: A Latent Transition Analysis of the Evolution of Programs From 1999 to 2016."** ***Addiction*** **114(2): 248–258.**

Reducing Opioid Misuse

- In a study using data on admissions to substance misuse treatment facilities from 2003 through 2014, states with mandatory use laws were associated with reductions in prescription drug misuse-related admissions: a 32 percent decrease for young adults aged 18–24, a 17 percent decrease for adults aged 25–44, and a 12 percent decrease for adults older than 45. **Grecu, A. M., Dave, D. M., and Saffer, H. (2019). "Mandatory Access Prescription Drug Monitoring Programs and Prescription Drug Abuse."** ***Journal of Policy Analysis and Management*** **38(1): 181–209.**

Systematic Review of PDMP Studies

- Researchers completed a systematic review of studies of the effects of PDMPs published between 2009 and 2019 (Puac-Polanco et al., 2020). They reviewed a total of 29 studies in relation to a range of opioid-related outcomes; although findings were somewhat mixed, the researchers concluded that "there is emerging evidence that PDMP implementation reduces opioid prescriptions, opioid diversion and supply, and

opioid-related morbidity and substance use disorders" (Puac-Polanco et al., 2020; p. 2). In particular, mandatory provider access was associated with reductions in prescribing behaviors, diversion outcomes, hospital admissions, SUDs, and mortality rates. These authors attributed the mixed nature of the findings to the different analytic approaches used in the studies and to heterogeneity of PDMP policies across states and over time. **Castillo-Carniglia, A., Ponicki, W. R., Gaidus, A., Gruenewald, P. J., Marshall, B. D. L., Fink, D. S., Martins, S. S., Rivera-Aguirre, A., Wintemute, G. J., and Cerda, M. (2019). "Prescription Drug Monitoring Programs and Opioid Overdoses: Exploring Sources of Heterogeneity." *Epidemiology* 30(2): 212–220.**

- Researchers conducted a scoping review to (1) describe available evidence regarding the impact of PDMPs in the United States and (2) propose a conceptual model to inform future PDMP implementation and evaluation efforts. They identified 11 relevant studies based on inclusion criteria using a PubMed database search of English-language studies published from January 1, 2000, to May 31, 2016. The extant evidence for the impact of PDMPs as an opioid risk mitigation tool remains mixed. Thematic analysis revealed four domains of opioid-related outcomes frequently examined in original studies evaluating PDMP implementation: (1) opioid prescribing, (2) opioid diversion and supply, (3) opioid misuse, and (4) opioid-related morbidity and mortality. An evaluation framework incorporating these domains is presented that highlights significant gaps in empirical research across each of these domains. **Finley, E. P., Garcia, A., Rosen, K., McGeary, D., Pugh, M. J., and Potter, J. S. (2017). "Evaluating the Impact of Prescription Drug Monitoring Program Implementation: A Scoping Review." *BMC Health Services Research* 17(1): 420.**
- Researchers conducted a narrative synthesis of opioid-related harms and consequences from PDMP implementation. Outcomes were grouped into categories by theme: opioid dependence, opioid-related care outcomes, opioid-related adverse events, and opioid-related legal and crime outcomes. The study found limited evidence to support overall associations between PDMPs and reductions in opioid-related consequences. However, this should not detract from the value of PDMPs' larger role of improving opioid prescribing. **Rhodes, E., Wilson, M., Robinson, A., Hayden, J. A., and Asbridge, M. (2019). "The Effectiveness of Prescription Drug Monitoring Programs at Reducing Opioid-related Harms and Consequences: A Systematic Review." *BMC Health Services Research* 19(1): 784.**
- Researchers conducted a systematic literature review to better understand the PDMP impact on reducing opioid misuse, improving prescriber practices, and how EHR integration has impacted PDMP usability. The main study objective was to conduct a systematic literature on PDMPs. Specific research questions were defined as PICO (Patient

or Problem, Intervention, Comparison, Outcome) questions: (1) How have PDMPs impacted opioid-related clinical outcomes and other related metrics? (2) How has the integration of PDMPs into EHRs impacted utilization and usability? The results suggest that PDMPs have had a mixed, but overall, positive impact on opioid use and related morbidity and mortality. However, the varying metrics and implementation landscape underscore the need for a meta-analysis of PDMP impact. The researchers also observed that usability and EHR integration issues are significant barriers to effective PDMP use, and they concluded that a better understanding of the technology and related human factors are needed to improve the usability, utility, and use of PDMPs. **Ponnapalli, A., Grando, A., Murcko, A., and Wertheim, P. (2018). "Systematic Literature Review of Prescription Drug Monitoring Programs."** ***AMIA Annual Symposium Proceedings*** **2018: 1478–1487.**

Appendix B—State/Territory Statutes and Regulations

State/Territory	Statute/Regulation Website
Alabama	https://www.alabamapublichealth.gov/pdmp/laws.html
Alaska	https://www.commerce.alaska.gov/web/cbpl/ProfessionalLicensing/PrescriptionDrugMonitoringProgram/LegislationRegulations.aspx
Arizona	https://pharmacypmp.az.gov/rules-statutes-minutes
Arkansas	https://www.healthy.arkansas.gov/images/uploads/rules/PDMP_Rule.pdf
California	https://oag.ca.gov/cures/regulations
Colorado	https://dpo.colorado.gov/PDMP/About
Connecticut	https://portal.ct.gov/DCP/Drug-Control-Division/Drug-Control/Drug-Laws-and-Regulations
Delaware	https://delcode.delaware.gov/title16/c047/sc07/
District of Columbia	https://lims.dccouncil.gov/Legislation/B23-0890; https://dchealth.dc.gov/node/952452; https://dchealth.dc.gov/node/1134307
Florida	https://www.floridahealth.gov/statistics-and-data/e-forcse/laws-rules/index.html
Georgia	https://rules.sos.state.ga.us/gac/511-7-2?urlRedirected=yes&data=admin&lookingfor=511-7-2
Guam	http://www.guamcourts.org/CompilerofLaws/index.html
Hawaii	http://dps.hawaii.gov/administrative-rules/; https://law.hawaii.gov/resources/administrative-rules/
Idaho	https://dopl.idaho.gov/bop/bop-statutes-rules-and-guidance/
Illinois	http://www.ilga.gov/legislation/ilcs/ilcs5.asp?ActID=1941&ChapterID=53; https://www.ilga.gov/commission/jcar/admincode/077/07702080sections.html
Indiana	https://www.in.gov/pla/inspect/laws-and-regulations/
Iowa	https://www.legis.iowa.gov/law/statutory; https://www.legis.iowa.gov/docs/iac/chapter/02-13-2019.657.37.pdf
Kansas	https://pharmacy.ks.gov/statutes-regs/statutes-regs
Kentucky	https://apps.legislature.ky.gov/law/statutes/statute.aspx?id=54048; https://apps.legislature.ky.gov/law/kar/titles/902/055/110/
Louisiana	https://www.pharmacy.la.gov/page/876
Maine	https://www.maine.gov/dhhs/obh/about/obh-rules
Maryland	https://health.maryland.gov/pdmp/Pages/PDMP-Regulations.aspx
Massachusetts	https://www.mass.gov/regulations/105-CMR-70000-implementation-of-mgl-c94c
Michigan	https://www.michigan.gov/lara/bureau-list/bpl/health/maps/laws-regulations
Minnesota	https://mn.gov/boards/pharmacy-pmp/requirements/
Mississippi	https://pmp.mbp.ms.gov/resources/laws-regulations
Missouri	https://revisor.mo.gov/main/OneSection.aspx?section=195.600; https://www.sos.mo.gov/CMSImages/AdRules/csr/current/1csr/1c60-1.pdf
Montana	https://boards.bsd.dli.mt.gov/pharmacy/mpdr/laws-rules
Nebraska	https://nebraskalegislature.gov/laws/statutes.php?statute=71-2454
Nevada	https://bop.nv.gov/board/ALL/Regulations/

New Hampshire	https://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-XXX-318-B.htm; https://www.gencourt.state.nh.us/rules/state_agencies/ph.html
New Jersey	https://www.njconsumeraffairs.gov/pmp/Pages/regulations.aspx
New Mexico	https://www.rld.nm.gov/boards-and-commissions/individual-boards-and-commissions/pharmacy/pharmacy-rules-and-laws/
New York	https://www.health.ny.gov/professionals/narcotic/laws_and_regulations/
North Carolina	http://www.ncga.state.nc.us/gascripts/statutes/StatutesTOC.pl?Chapter=0090
North Dakota	https://www.nodakpharmacy.com/pdfs/PDMPlaws.pdf; https://www.nodakpharmacy.com/pdfs/PDMPrules.pdf
Northern Mariana Islands	
Ohio	https://www.ohiopmp.gov/Resources
Oklahoma	https://www.obndd.ok.gov/about-us/rules-regulations
Oregon	
Pennsylvania	http://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2014&sessInd=0&act=191
Puerto Rico	https://www.oslpr.org/
Rhode Island	http://www.health.ri.gov/regulations/?parm=Pharmacy
South Carolina	https://www.scstatehouse.gov/code/t44c053.php
South Dakota	https://sdlegislature.gov/Statutes/34-20E; https://sdlegislature.gov/Rules/Administrative/20:51:32
Tennessee	https://www.tn.gov/health/health-program-areas/health-professional-boards/csmd-board/csmd-board/csmd-regulations.html
Texas	https://statutes.capitol.texas.gov/docs/HS/htm/HS.481.htm; https://www.pharmacy.texas.gov/rules/
Utah	https://dopl.utah.gov/controlled-substance-database/laws-and-rules/
Vermont	https://legislature.vermont.gov/statutes/fullchapter/18/084A
Virginia	https://www.dhp.virginia.gov/PractitionerResources/PrescriptionMonitoringProgram/ParticipantResources/LawsandRegulations/Laws/; https://www.dhp.virginia.gov/PractitionerResources/PrescriptionMonitoringProgram/ParticipantResources/LawsandRegulations/regulations/
Washington	https://doh.wa.gov/public-health-healthcare-providers/healthcare-professions-and-facilities/prescription-monitoring-program-pmp
West Virginia	https://www.wvbop.com/laws-rules/pharmacylawsandrules.asp
Wisconsin	https://docs.legis.wisconsin.gov/statutes/statutes/961/III/385; https://docs.legis.wisconsin.gov/code/admin_code/csb/4
Wyoming	https://pharmacyboard.wyo.gov/laws

Appendix C—PDMP Service Provider User Manuals

State	Data Upload Manual	User Account Manual
Alabama	https://www.alabamapublichealth.gov/pdmp/assets/datasubmissiondispenserguide.pdf	https://www.alabamapublichealth.gov/pdmp/assets/requestorusersupportmanual.pdf
Alaska	https://www.commerce.alaska.gov/web/Portals/5/pub/PHA_AWARxE_DispenserGuide.pdf	https://www.commerce.alaska.gov/web/Portals/5/pub/PDMPUserGuide.pdf
Arizona	https://pharmacypmp.az.gov/sites/default/files/2022-03/AZ%20Data%20Submission%20Dispenser%20Guide_v%202.4.pdf	https://dev-az2-pharmacypmp.pantheonsite.io/sites/default/files/2022-03/AZ%20PMP%20AWARxE%20User%20Support%20Manual_v2.5.pdf
Arkansas	https://www.healthy.arkansas.gov/images/uploads/pdf/User_guide_for_Clearinghouse_PDMP.pdf	https://www.healthy.arkansas.gov/images/uploads/pdf/User_guide_for_AWARE.PDF
California	https://pmpclearinghouse.zendesk.com/hc/en-us/article_attachments/26162720338963	https://oag.ca.gov/system/files/media/cures-optimization-user-guide.pdf
Colorado	https://drive.google.com/file/d/0B-K5DhxXxJZbVnAyMkgzSVBwWUk/view?resourcekey=0-8cB79Dyf6hff7ThL-A-1og	https://drive.google.com/file/d/17PfivBZ5JE4U9M8l-N32lmgN3JUvoo52/view
Connecticut	https://portal.ct.gov/-/media/DCP/drug_control/PMP/Educational-Materials/CT-Data-Submission-Dispenser-Guide_v-24_April-2022.pdf	https://portal.ct.gov/-/media/DCP/drug_control/PMP/2022/Bamboo-narxcare_user_guide_June-2022.pdf
Delaware	https://go.bamboohealth.com/rs/228-ZPQ-393/images/DE-Data_SubmissionDispenserGuide_v2.2.pdf	https://bamboohealth.com/wp-content/uploads/2023/01/DE-Requestor-User-Support-Manual_v3.0_Dec.pdf
District of Columbia	https://dchealth.dc.gov/sites/default/files/dc/sites/doh/page_content/attachments/Washington-DC-Data-Submission-Dispenser-Guide-v2.pdf	https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20PDMP%20AWARxE%20User%20Support%20Manual_Final_9.20.16%20%283%29.pdf
Florida	https://www.floridahealth.gov/statistics-and-data/e-forcse/dispenser/fl-data-submission-dispenser-guide-asap4.2a-v2.3.pdf	http://hidesigns.com/assets/files/flpdms/2016/Training_Guide_for_Florida_Practitioners_and_Pharmacists_-_Designee_Update_Final.pdf
Georgia	https://dph.georgia.gov/sites/dph.georgia.gov/files/GA%20PDMP%20Dispenser%20Guidev1.2.pdf	https://dph.georgia.gov/media/73041/download
Guam		
Hawaii	https://dcr.hawaii.gov/wp-content/uploads/2020/05/HI-PDMP-Data-Submission-Dispenser-Guide_v2.1.pdf	https://dcr.hawaii.gov/wp-content/uploads/2016/12/HI-PDMP-AWARxE-Requestor-USER-Guide.pdf

Idaho	https://dopl.idaho.gov/wp-content/uploads/2023/05/HP-PDMP-ID-Data-Submission-and-Registration-Dispenser-Guide-v3.1.pdf	https://dopl.idaho.gov/wp-content/uploads/2023/05/HP-PDMP-ID-Requestor-User-Support-Manual-and-Registration-Instructions-V3.1.pdf
Illinois	https://rxsubmit-il.logicoy.com/PDMPSystemApp/guidebeforelogin#!#documents	https://www.ilpmp.org/PMPVideos.php
Indiana	https://www.in.gov/pla/inspect/files/2022-IN-PMP-Data-Submission-Dispenser-Guide_v-3_0.docx	https://www.in.gov/pla/inspect/files/IN-Prescriber-Report-User-Guide_v2-Interactive.pdf
Iowa	https://dial.iowa.gov/media/7113/download?inline=	https://dial.iowa.gov/media/7077/download?inline=
Kansas	https://pharmacy.ks.gov/docs/librariesprovider10/ktracs/user-guides/ks-data-submission-dispenser-guide_v-2-1.pdf?sfvrsn=4453ab01_19	https://pharmacy.uat.ks.gov/docs/librariesprovider10/ktracs/user-guides/ks-prescriber-report-user-guide.pdf?sfvrsn=c4e8aa01_2
Kentucky	https://www.chfs.ky.gov/agencies/os/oig/dai/deppb/Documents/KASPERControlledSubstanceReportingGuide.pdf	https://www.chfs.ky.gov/agencies/os/oig/dai/deppb/Documents/KASPERPrescriberReportCardUserGuide.pdf
Louisiana	https://www.pharmacy.la.gov/assets/docs/PMP/Support_Guides/LA-Data-Submission-Dispenser-Guide_v3.1-1_2022.11.pdf	https://www.pharmacy.la.gov/assets/docs/PMP/Support_Guides/AWARxE_UserSupportManual_v3.1_2022.11.pdf
Maine	https://www.maine.gov/dhhs/sites/maine.gov.dhhs/files/inline-files/ME%20Data%20Submission%20Dispenser%20Guide_v2.1_et.pdf	https://www.maine.gov/dhhs/sites/maine.gov.dhhs/files/inline-files/ME-PMP-AWARxE-User-Support-Manual_v2.2%281%29.pdf
Maryland	https://health.maryland.gov/pdmp/Documents/RxGov%20PDMP%20Data%20Submitter%20Guide.pdf	https://health.maryland.gov/pdmp/Pages/-Clinical-Resources.aspx
Massachusetts	https://www.mass.gov/doc/pmp-data-submission-dispenser-guide-version-51-0/download	https://www.mass.gov/doc/prescriber-report-user-guide-0/download
Michigan	https://www.michigan.gov/lara/-/media/Project/Websites/lara/bpl/MAPS/Michigan-Data-Submission-Dispenser-Guide.pdf?rev=75cf4fbca5004c849d5278276b3a26ba&hash=0B0BC1160F86C77783FF58A3DE4EC685	https://www.michigan.gov/lara/-/media/Project/Websites/lara/bpl/MAPS/MAPS-Requestor-User-Support-Manual.pdf?rev=833e5cc3e88f42a29283d257d54730a3&hash=F1BE1C23FF5D8B89E88A12197BB8FF68
Minnesota	https://mn.gov/boards/assets/MN%20Data%20Submission%20Dispenser%20Guide_v2.1_tcm21-563922.pdf	https://mn.gov/boards/assets/MN%20Requestor%20User%20Support%20Manual_v2.0%20%281%29_tcm21-561414.pdf

Mississippi	https://pmp.mbp.ms.gov/sites/default/files/pmp/forms-documents/MS-PMP-Data-Submission-Dispenser-Guide_v3.0.pdf	https://pmp.mbp.ms.gov/sites/default/files/pmp/forms-documents/Mississippi-PMP-AWARxE-User-Support-Manual_v3.0-002.pdf
Missouri	https://pdmp.mo.gov/wp-content/uploads/2023/11/mo-pmp-data-submission-dispenser-guide.pdf	https://pdmp.mo.gov/wp-content/uploads/2023/12/MO-PMP-AWARxE-User-Support-Manual_v1.11.15.23.pdf
Montana	https://boards.bsd.dli.mt.gov/_docs/pha/MT-Data-Submission-Dispenser-Guide.pdf	https://boards.bsd.dli.mt.gov/_docs/pha/MT-PMPAWARxE_RegisteredUserGuide.pdf
Nebraska	https://dhhs.ne.gov/DOP%20document%20library/PDMP-Submitter-User-Guide.pdf	https://dhhs.ne.gov/DOP%20document%20library/Nebraska%20PDMP%20Clinician%20User%20Guide.pdf
Nevada	https://bop.nv.gov/uploadedFiles/bopnvgov/content/Links/NV%20Data%20Submission%20Dispenser%20Guide_v3.0_FINAL.pdf	https://bop.nv.gov/uploadedFiles/bopnvgov/content/Links/NV%20Requestor%20User%20Support%20Manual_v3.0_FINAL.pdf
New Hampshire	https://www.dhhs.nh.gov/sites/g/files/ehbemt476/files/documents2/pdmp-guide-dispensers-3-1.pdf	https://www.dhhs.nh.gov/sites/g/files/ehbemt476/files/documents2/pdmp-nhpmpawarxeusersupportmanual.pdf
New Jersey	https://www.njconsumeraffairs.gov/pmp/Documents/NJPMP-Data-Submission-Dispenser-Guide.pdf	https://d1b1sdx6nwlphm.cloudfront.net/aware/default/updated_user_registration_tutorial.pdf
New Mexico	https://www.nmpmp.info/wp-content/uploads/2023/11/NM-PMP-Data-Submission-Dispenser-Guide_v4.0.pdf	https://www.nmpmp.info/wp-content/uploads/2023/01/aware_user_guide.pdf
New York	https://www.health.ny.gov/professionals/narcotic/electronic_data_transmission/docs/submitter_guide.pdf	https://www.health.ny.gov/professionals/narcotic/prescription_monitoring/online_notification_program/
North Carolina		
North Dakota	https://www.nodakpharmacy.com/pdfs/AWARxEmanual.pdf	https://www.nodakpharmacy.com/pdfs/NDPMP_AWARxE_UserSupportManual.pdf
Northern Mariana Islands		
Ohio	https://www.ohiopmp.gov/documents/general/pharmacies_prescribers/ohio%20pmp%20handbook%20(asap%204.2a)%20-%20instructions%20for%20reporting%20dispensed%20drugs%20to%20oarrs.pdf	https://www.ohiopmp.gov/documents/general/pharmacies_prescribers/oarrs%20user%20manual.pdf
Oklahoma		
Oregon	https://www.oregon.gov/oha/PH/PREVENTIONWELLNESS/SAFELIVING/PDMP/Documents/Oregon_PDMP_Data_Submission_Dispenser_Guide.pdf	https://www.oregon.gov/oha/PH/PREVENTIONWELLNESS/SAFELIVING/PDMP/Documents/OR_PMP_AWARxE_Requestor_User_Support_Manual.pdf

Pennsylvania	https://www.health.pa.gov/topics/Documents/Programs/PDMP/Data_Submitter_Guide.pdf	https://www.health.pa.gov/topics/programs/PDMP/Pages/Tutorial.aspx
Puerto Rico		
Rhode Island	https://health.ri.gov/publications/guides/DataSubmissionDispenserGuideRIPDMP.pdf	https://health.ri.gov/publications/guides/HowToUseThePDMP.pdf
South Carolina	https://scdhec.gov/sites/default/files/media/document/SC%20PMP%20Data%20Submission%20Dispenser%20Guide_v%203.1_1.pdf	https://scdhec.gov/sites/default/files/media/document/SC_PMP_AWARxE_User_Support_Manual_v3.0.pdf
South Dakota	https://doh.sd.gov/media/4drnlnkz/sd-data-submitter-guide.pdf	https://doh.sd.gov/media/yyrfmvrg/usersupportguide.pdf
Tennessee	https://www.tn.gov/content/dam/tn/health/healthprofboards/csmd/TNDataCollectionManualTN.pdf	
Texas	https://www.pharmacy.texas.gov/files_pdf/pmp/data-submission-guide-for-dispensers.pdf	https://www.pharmacy.texas.gov/files_pdf/pmp/TX-PMP-AWARxE-User-Support-Manual.pdf
Utah	https://dopl.utah.gov/wp-content/uploads/2022/11/utah-RxGov-dispensing-guide.pdf	https://utconcierge.qualtrics.com/jfe/form/SV_9vK8bO1x4BShSfk
Vermont	https://www.healthvermont.gov/sites/default/files/documents/pdf/ADAP-VPMS-Data-Submission-Dispenser-Guide.pdf	https://d1b1sdx6nwlphm.cloudfront.net/aware/vt_aws_prod/aware_user_guide.pdf
Virginia	https://www.dhp.virginia.gov/media/dhpweb/docs/pmp/VAPMPDispenserGuide_v2.6.pdf	https://www.dhp.virginia.gov/media/dhpweb/docs/pmp/PMPAWARxEUserSupportManual_v3.0.pdf
Washington	https://doh.wa.gov/sites/default/files/legacy/Documents/2600/WA-DataSubmissionDispenserGuide.pdf	https://doh.wa.gov/sites/default/files/legacy/Documents/2600/WA-PMPAWARxERequesterUserSupportManual.pdf
West Virginia		
Wisconsin	https://pdmp.wi.gov/Content/WIPDMPDataSubmitterGuide.pdf	https://pdmp.wi.gov/Content/WisconsinePDMPUserFAQ.pdf
Wyoming	https://drive.google.com/file/d/1LRP1Yg6GWNBP1VQj9jloHJVNXLq2NHDe/view	https://drive.google.com/file/d/1q7Goiovfafa-Wu4pELB0f5q6gcx-sdYr/view

Appendix D—Examples of FAQs

Category	Sample Questions and Answers
General	Am I required to see a driver's license or social security number for the patient identifier field?
	It is preferred that you collect driver's license or state-issued ID numbers on all patients that you can. If the patient does not have either of these, you can use their social security number; create an ID by using the patient's first, middle, and last initials, eight-digit date of birth (DOB), and gender, e.g., ADG01191978F (if you cannot add the gender to the end, just use initials and DOB); or use their insurance number.
	Can I keep a copy of the PDMP in the patient's file?
	Yes. It is also recommended that you discuss any plans to keep copies of reports with your legal advisor to ensure that your plans meet any other requirements. OR The PDMP recommends that all PDMP history reports be kept in a separate location that is only accessible to authorized personnel. Essentially, the PDMP Patient History Report should not be filed in the patient medical chart. This measure will prevent unauthorized disclosure of the PDMP Patient History Report from being accessed and distributed by unauthorized individuals.
	Do other states have a prescription drug monitoring program?
	Yes, all 50 states, the District of Columbia, and three U.S. territories (Commonwealth of Northern Mariana Islands, Guam, and Puerto Rico) have PDMPs that are operational (i.e., collecting data from dispensers and reporting information from the database to authorized users).
	How can the PDMP information help me in my daily practice?
	The PDMP database is most useful for detecting and preventing inappropriate use or misuse of opioids and other controlled substances through information such as identification of a patient seeing multiple prescribers ("doctor shopping") or having prescriptions filled at multiple pharmacies ("pharmacy hopping"). If your registration is approved, you can log in and view the last 6 months of controlled substance prescriptions for a patient. If you see a pattern of excessive use of controlled substances, you can use more caution in prescribing or dispensing to the patient. Another use for the database is for prescribers to detect pharmacy errors or fraudulent use of their DEA numbers. A prescriber can log in and run a report displaying all schedule drugs reported with their DEA number.
	How is compliance measured with the PDMP?
	The PDMP matches the list of pharmacies who filed a report against the list of pharmacies licensed in the state. Those who failed to report will be contacted. If you have a problem reporting on time, contact the PDMP as soon as possible to arrange a mutually agreeable time to report. The PDMP uses thresholds to measure whether a pharmacy reports all the required data. The PDMP will reject a record that is missing data and is below the threshold. The pharmacy will receive a letter from the PDMP that identifies the rejected records. These prescriptions must be corrected and resubmitted.

General (cont'd)	How is this program funded?
	The implementation and initial operation of the program is funded by a grant from the U.S. Department of Justice, Bureau of Justice Assistance. OR Health care providers and pharmacists are the ones paying for the system. Licensees pay a $25 annual fee, included in their boards' licensing fees. No general state funds are used. The rationale is that this will be a tool used by health care providers and pharmacists to help provide better patient care.
	How long does it take a prescription to appear on a patient's PDMP report after being dispensed?
	Pharmacies are required to report prescription information to the PDMP within 1 day of the date the drug was dispensed. Taking into account the time required to process that information and prepare it for reporting, the prescription information should be available within a few days of the dispensing date at the latest.
	How often is the data in the PDMP updated?
	All retail pharmacies that dispense schedule drugs are required to report their scripts to the PDMP on a daily basis. We collect the scripts throughout the week and load them into the PDMP on Friday of each week. OR All dispensers must report data weekly. However, if the dispensing pharmacy or practitioner does not have the technology or does not fill any controlled substance prescriptions to patients, a waiver may be requested. OR Dispensers are required to submit data to the PDMP within 7 days of dispensing a monitored prescription drug. Dispensers are encouraged to submit data as soon and as often as they like.
	How will the effectiveness of the PDMP be assessed?
	The primary purposes of the PDMP are to improve patient care and safety and to reduce the misuse and diversion of prescription drugs while ensuring that patients with a legitimate medical need for the drugs are not adversely affected. With that in mind, there are numerous ways in which "success" may be measured, including an increase in the number of health care professionals using the PDMP and reductions in the reported rate of current non-medical users of prescription drugs; the reported initiation rate of non-medical users of prescription drugs; the reported rate of prescription drug misuse; the rate of emergency room admissions for prescription drug overdose; and the rate of prescription drug-related deaths.
	Is information from other states visible?
	Yes. With direct access to the program, prescribers may also request information from other states through the interstate query feature.
	Is the PDMP accessible via the EHR, the HIE, or pharmacy software?
	Yes. You can access the PDMP from within the health information network. The report will be limited to the past year, and no other state's data is included.
	The report shows a hospital as the prescriber. How do I know who actually wrote the prescription?
	Pharmacies report the DEA number of the prescriber to the PDMP. For prescribers who are authorized to use the DEA number of the hospital/institution in which they work, the DEA number will correspond to a specific hospital/institution. Contact the dispensing pharmacy to determine the actual prescriber; they are required to maintain that information.

General (cont'd)	What are drugs of concern?
	The following are considered drugs of concern: any product containing all three of these drugs: butalbital, acetaminophen, and caffeine; tramadol; and any compound, mixture, or preparation that contains any detectable quantity of ephedrine or pseudoephedrine, its salts or optical isomers, or salts of optical isomers. Any individual who wants to have a drug added to the program for monitoring may submit a written request to the PDMP.
	What are the laws/statutes and regulations?
	Each PDMP's profile has a link to the laws and rules governing the PDMP: http://www.pdmpassist.org/content/state-profiles.
	What information is contained in the PDMP?
	The PDMP contains all Schedule II, III, IV, and V controlled substance prescriptions dispensed by retail pharmacies. OR The following information is reported to the PDMP: the recipient's name; the recipient's or the recipient representative's identification number or the identification number or phrase designated by the central repository; the recipient's date of birth; the national drug code number of the controlled substance dispensed; the date the controlled substance was dispensed; the quantity of the controlled substance dispensed; the number of days of the supply dispensed; the dispenser's DEA registration number; the prescriber's DEA registration number; and the patient's address information, including city, state, and zip code.
	What is the PDMP? What is the purpose of the PDMP?
	Prescription drug monitoring programs (PDMPs) are highly effective tools utilized by government officials for reducing prescription drug misuse and diversion. PDMPs collect, monitor, and analyze electronically transmitted prescribing and dispensing data submitted by pharmacies and dispensing practitioners. The data are used to support states' efforts in education, research, enforcement, and misuse prevention. PDMPs are managed under the auspices of a state, district, commonwealth, or territory of the United States. States recognize the medical need for controlled substances; therefore, PDMPs do not interfere with appropriate medical use. Prescription data is provided only to entities authorized by state law to access the program, such as health care practitioners, pharmacists, regulatory boards, and law enforcement agencies. PDMPs are proactive in safeguarding public health and safety while supporting the legitimate use of controlled substances. PDMPs do not infringe on the legitimate prescribing of a controlled substance by a practitioner acting in good faith and in the course of a professional practice.
	When am I required to request a PDMP report?
	Each board (pharmacy, medical, nursing, and dental) has its own rules defining when it is required to obtain a report on a patient.
	Where does the data in the report come from?
	Data contained in the PDMP reports come directly from the dispensing pharmacy locations. All questions on a particular record or records should be directed to the dispensing pharmacy, as it has the original, hard copy prescription or phone records on hand.
	Which prescription drugs are monitored?
	The law stipulates that the program is to monitor all Schedule II, III, IV, and V controlled substances.

General (cont'd)	Will having this program in our state limit the ability of patients to receive necessary medications?
	No. The PDMP will not interfere with the legitimate use of any medication. The purpose of the program is to promote optimal patient and community health by ensuring the correct use of scheduled medications and to prevent potential diversion and misuse.
	Will the PDMP offer any kind of referrals to treatment programs?
	The PDMP provides data to health care professionals to enable them to make more-informed decisions about prescribing and dispensing monitored prescription drugs to their patients or potential patients. Health care professionals are encouraged to use the data obtained from the PDMP to improve their treatment of patients, including referring patients to substance misuse treatment, if they choose to do so.
Access	How can I reset my password?
	By navigating to the User Profile screen, a user can change their password by selecting "Password Reset." A user can reset a forgotten password by clicking the "Forgot My Password" link located on the log-in screen.
	How do I change information within my user profile?
	You must email the administrator to change information contained in your user profile.
	How do I register for a PDMP account?
	You must register for an account on the PDMP's service provider's website.
	How many months/years are data available for access in the PDMP?
	Data reported is available to permissible users for a 12-month period beginning the day the data was received. The PDMP program staff and certain authorized individuals may use all data collected for the purposes of administering, operating, and maintaining the PDMP and conducting trend analyses and other studies necessary to evaluate the effectiveness of the program. Data retained beyond 24 months must be de-identified. Data is retained for a maximum of 4 years.
	Under what circumstances are law enforcement officers permitted to request an Rx report?
	Law enforcement officers are permitted to request Rx history reports on a patient when the patient is the subject of an open investigation involving a drug crime. OR Federal, state, and local law enforcement authorities are permitted to request an Rx report when acting pursuant to a valid search warrant.
	Who can access the PDMP?
	The following can access the PDMP: prescribers and pharmacists with registered accounts; regulatory boards in the Department of Regulatory Agencies with a valid court order or subpoena; and law enforcement officers with a valid court order or subpoena. Patients may receive a copy of their own information.
Use	Can a patient get a copy of their own PDMP report? Can I get a copy of my own PDMP report?
	The only mechanism available for an individual to obtain their prescription history report is through the Information Practices Act (IPA). OR An individual may request their own PDMP report by completing an application, having it notarized, and presenting it to the PDMP office.

Use (cont'd)	Can I run a PDMP report for someone else at my office or pharmacy?
	If you also treat the patient, you can request a report on the patient and share the report with others who treat the patient within your office or pharmacy. However, you may not provide a report to someone else solely for their own use. The treating physician/pharmacist should obtain their own PDMP account.
	Can I run a PDMP report on a patient whom I have treated in the past but am not currently treating?
	State law allows a pharmacist or prescriber to request a PDMP Patient History Report solely for the purpose of treatment. If you are no longer treating the patient, you are not authorized to request a PDMP report.
	Can PDMP reports be generated for pharmacy recordkeeping?
	Yes; however, copying or providing this data to an outside entity is strictly prohibited.
	How can practitioners, patients, or anyone else dispute the information about them stored by the PDMP?
	Patients or health care professionals who believe they have identified an error should ask the pharmacy or dispenser that submitted the data to correct the error. Only the pharmacy or dispenser that submitted the information can correct the error.
	How should providers use these reports?
	Reports should be used to supplement a patient evaluation or investigation, to confirm a patient's drug history, or to document compliance with a therapeutic regimen. The PDMP does not guarantee any report to be wholly accurate or complete. The report is based on the search criteria entered and the data entered by the dispenser. For questions about any record in a PDMP report or to verify a prescription, contact the dispenser directly. If there are any concerns about data provided, please contact the PDMP. Please do not email patient confidential information or redistribute the reports.
	If a problem is found, are we required to explain what we found to the patient?
	No, it is up to the discretion of the provider. A printed copy of the report can be logged in the patient medical record.
	Is registration mandatory?
	Prescribers must submit an application before [date] or upon receipt of a federal DEA registration, whichever occurs later. Registration requirements are not based on dispensing, prescribing, or administering activities but, rather, on possession of a DEA Controlled Substance Registration Certificate.
	Is use mandatory?
	Requirements for use of the PDMP include the following: (1) when prescribing a patient a controlled substance of more than 30 MME per day, physicians shall query the PDMP for that patient at least two times per year; (2) when physicians write a prescription for more than 90 MME per day, they shall query the PDMP on the same day the prescription is written; and (3) for controlled substances totaling 30 MME or less, physicians are expected to use the PDMP in a manner consistent with good clinical practice. State statute provides exemptions for query requirements, including when writing prescriptions for nursing home patients; when writing prescriptions for hospice patients, where the prescription indicates hospice on the physical prescription; when treating a patient for active, malignant pain; or when providing intra-operative patient care.

Use (cont'd)	What are patient alerts?
	Patient alerts are messages that alert clinicians when their patients' aggregate prescription levels exceed certain thresholds. Alerts are presented at the following therapy thresholds: the patient is currently prescribed more than 100 MME per day; the patient has obtained prescriptions from six or more prescribers or six or more pharmacies during the last 6 months; the patient is currently prescribed more than 40 MME of methadone daily; the patient is currently prescribed opioids more than 90 consecutive days; and the patient is currently prescribed both benzodiazepines and opioids.
	What are the clinical steps in response to concerns raised by a report?
	Talk with your patient. Attempt to determine the reasons for the concerning behavior—these reasons could include changing providers because of insurance coverage; undertreatment of pain; misunderstanding your pain management rules; prescription drug misuse; and illegal behavior (diversion, fraud, etc.). Administer a brief intervention. Express concern over behavior patterns; discuss risks of misuse and its negative consequences. Clarify expectations (using one pharmacy, receiving controlled medications from only one provider, etc.). OR Increase patient monitoring and limit setting.
	What if I suspect that my information has been accessed or used inappropriately?
	Improper access or disclosure of information should be reported in writing to the PDMP. The notification should include what information you suspect was inappropriately accessed or used, when and by whom, and why the action is considered inappropriate. The PDMP will investigate the matter.
	What information do I need to provide to make a request for a patient PDMP report?
	At a minimum, you must provide a patient's first name, last name, and date of birth in order to make a request for a report.
	What information does a report provide?
	A report provides the patient's name, date of birth and address (which the requestor provides); the prescriber's name; the dispenser's name, city, state, and phone number; and the drug name and strength, prescription number, days' supply, quantity dispensed, and dispensing date.
	What kind of flagging system exists?
	Currently, the only warning system goes out monthly to the prescribers and dispensers in the form of "unsolicited reports." When the patient meets a certain criteria, a report is generated and sent to all the prescribers and dispensers that are seeing that patient.
	What should a prescriber or dispenser do if they think data from the PDMP indicates that a patient is misusing prescription drugs?
	Data obtained from the PDMP may be used to make more informed decisions regarding the care given to a patient. However, data from the PDMP is not 100 percent accurate and should not be the only source of information considered when determining whether a patient may be misusing prescription drugs.

Dispensers	Do dispensing practitioners have to report to the PDMP if controlled substances are dispensed from an office?
	A pharmacy or dispensing practitioner who never dispenses controlled substances is not required to report to the PDMP and can notify the PDMP in writing that they will not be reporting. OR A pharmacy or dispensing practitioner who never dispenses controlled substances can request a permanent exemption from the reporting requirement. Those that dispense controlled substances only occasionally may submit "zero claim" reports for periods during which they have not dispensed any controlled substances to patients.
	Do I have to transmit zero reports?
	A zero report must be submitted every 7 days for a retail pharmacy or every 30 days for a hospital (Type II) pharmacy. The reporting frequency may be subject to change.
	Do nonresident (out-of-state) pharmacies report to the PDMP?
	Nonresident pharmacies that dispense and send prescriptions to this state's residents are required to report controlled substance prescriptions to the PDMP.
	How can I manually enter a prescription into the PDMP?
	Prescription data can be manually entered into the PDMP using the Universal Claim Form (UCF) option available to data submitters. To submit a UCF, a user must register for a PDMP account. Entities that do not have pharmacy software or the ability to create an ASAP file for data submission may submit data via a UCF.
	How can I view the status of files that I have submitted to the PDMP?
	The File Status screen displays information extracted from the data files submitted to the PDMP. A status column is located at the end of each row displaying the status of the file. If there are errors, then the status column will state "Pending Dispensation Error" and the text will be a hyperlink to the View Records screen. If a file is unable to be parsed into the PDMP, the appropriate message will display. A new file must be submitted to the PDMP. It is not necessary to void a file that failed parsing, since it was not successfully submitted to the PDMP. If a file has been submitted by SFTP without using a state-specific subfolder, the file will be displayed and the user will be prompted to select a destination PDMP for the data file to be transferred to.
	How do I report a compounded prescription?
	You should use all 9s in the NDC field for compounded drugs and then use the fields in the CDI segment. This will allow you to put the NDC numbers that you used to make the compound in the CDI segment. In the NDC field for the DSP segment you will just need "99999999999."
	How often do I have to report to the PDMP?
	All dispensers must report data weekly. However, if the dispensing pharmacy or practitioner does not have the technology or does not fill any controlled substance prescriptions to patients, a waiver may be requested.
	Is there an exemption form/waiver?
	To request an exemption from PDMP reporting, send a letter of explanation to the PDMP and include your DEA number. If your situation changes and you do dispense a reportable medication, you must report. Exemptions must be renewed with each renewal of the terminal distributor license.

Dispensers (cont'd)	What options are available for reporting to the PDMP?
	Secure FTP over SSH, PGP-encrypted files sent via simple FTP, upload via SSL website, physical media (tape, diskette, CD, DVD), and an online UCF. All of these methods must adhere to the ASAP standard. If an automated recordkeeping system capable of producing an electronic report in the ASAP format is not available, dispensers may submit prescription information via paper submission using a specially provided form.
	Who is required to submit information to the PDMP?
	Dispensers are required to submit information about each dispensing of a monitored prescription drug. "Dispenser" means both a pharmacy from where a pharmacist dispenses a monitored prescription drug and a practitioner who dispenses a monitored prescription drug.
	Who is exempted from reporting?
	Certain types of pharmacies, clinics, and practitioners are NOT considered dispensers for PDMP purposes and are therefore EXEMPT from reporting to the PDMP. These include the following: licensed hospital pharmacies that only distribute controlled dangerous substances (CDS) for direct administration to an inpatient of the hospital; pharmacies that provide pharmaceutical specialty services exclusively to persons living in assisted living facilities, comprehensive care facilities, and developmental disabilities facilities; opioid maintenance programs; and veterinarians when dispensing controlled substances for animals in the usual course of providing professional services.
	Are there any exceptions to the reporting requirements?
	Certain types of drug delivery are not required to be reported, including direct administration of CDS to a patient; provision of patient drug samples; and inpatient hospice dispensing.
Data Errors	Do I have to correct duplicate errors?
	No. If you generate a duplicate error, it means that record is already in the system. You may disregard duplicate errors.
	How do I correct my errors after I have uploaded data into the PDMP?
	After viewing your error report, you should go back into your pharmacy's software system and correct each error. Once you have completed your error correction, you may resubmit your records in the same file or as part of your next regular submission.
	I ran a PDMP report and more than one person showed up on the results. What do I do?
	Occasionally, two people will show up on a single PDMP report. This most often occurs when both parties have the same birth date or same street name or when there are multiple pieces of overlapping information and the computer is unable to isolate one unique patient. This is common with twins and when two people in the same household have the same or similar names (e.g., father/son Jr., Joan and John, Michelle/Michael). Email the PDMP and provide the name (with proper spelling) and date of birth of the patient, and the PDMP will separate the accounts. The PDMP prefers that this information come from the prescriber or pharmacy, not the patient. The PDMP is not able to separate patients from interstate requests. Each patient will have a state identifier in the name box indicating from which state's PDMP the data was pulled.
	If there is a potential error in the report, who should be contacted?
	Contact the dispensing pharmacy or practitioner to verify that the information they reported is correct; the PDMP if there is information missing; or law enforcement if a crime has been committed.

Data Errors (cont'd)	What does it mean if it says my request returned multiple patient records?
	This means that multiple patients were identified as matching the search criteria and the request must be manually consolidated by the administrator to include the correct patient records. Once a particular set of patient records has been consolidated, the request will not have to be repeated and the user will not experience a delay the next time this patient report is requested.
	What does it mean if it says "no matching patient found"?
	That means that no patient records in the database matched the search criteria entered or for the time period searched. If you believe this has occurred in error, please contact the PDMP and a ticket will be created for you to receive assistance with this matter.
	What if a patient says the PDMP information is wrong and the information is falsely attributed to them?
	First, review the patient information to ensure that there is not more than one individual on the report and that the report has not combined information on the patient with that of another individual. Secondly, confirm any prescriptions of concern by contacting the dispensing pharmacy. The dispensing pharmacy will have the hard copy record of the original prescription and should be able to answer questions regarding the prescription. The pharmacy can also verify the patient's information for you. If the patient contests the information on the report and believes that it is an error, have the patient contact the PDMP.
	What if the report is missing names or numbers?
	If the report is missing names or numbers, it means that the information reported to the PDMP was incomplete and did not contain all required fields when it was transmitted. If possible, you may contact the dispensing pharmacy for more information on that particular prescription record.
	How do I correct errors within submitted files?
	The View Records screen provides a deeper view of the records within a selected data file that need correcting. A "Correct" button is displayed at the end of each row that will allow the user to make corrections to the record. The Error Correction screen allows a user to make corrections to data submitted that did not pass the validation rules. A "Corrected Value" column displays the values the user enters to correct the error. The "Message" column displays the relevant error message for the field explaining why it did not pass the validation rules.
	Why can't I find prescriptions that I know have been written or filled?
	There could be several reasons for this: (1) the dispensing pharmacy is not properly reporting its prescription data to the PDMP. If you think that is the situation, please let the PDMP know so it can contact the particular pharmacy; (2) there may be a difference in patient name spelling from how you think it is spelled and how it is actually listed in the PDMP; and (3) if the prescription was written and or filled in the last week, it has not yet been reported to the PDMP.
	Why do I see scripts in the PDMP attributed to me that I did not write, and what can I do about it?
	The dispensing pharmacy may have erroneously entered into its computer system your name/DEA number as the prescribing physician. And, of course, there is the possibility that unauthorized prescriptions are being written using your name and DEA number. Regardless, please call the PDMP with the details of the discrepancy so it can determine the circumstances of the situation. The PDMP will keep you informed about what it finds.

Delegates	Can a person be a delegate for more than one prescriber or pharmacist?
	Yes, so long as the person is sufficiently competent in the use of the PDMP and is either employed by or under contract with the prescriber or pharmacist, or the same practice or pharmacy.
	Can I authorize a delegate to access the PDMP?
	Yes. As a prescriber or pharmacist, you can authorize up to three delegates to access the PDMP database for your patients.
	How does a delegate enroll in the PDMP?
	A delegate may register for an account by creating an account within the PDMP. The registering individual must provide the email address of a supervisor who is previously registered within the PDMP; delegates can provide email addresses of more than one supervisor. Supervisors must approve the delegate request before the PDMP administrator will be able to approve the account for access.
	How many delegates may a prescriber/dispenser have?
	A prescriber/supervisor may have as many delegates as they are comfortable supervising in the appropriate use of the PDMP. A delegate may be a delegate for multiple prescribers/supervisors.
	Who can I choose as a delegate?
	If you are a prescriber, you may authorize a delegate who is sufficiently competent in the use of the PDMP and whom you either employ or have under contract with your practice. If you are a pharmacist, you may authorize a delegate who is sufficiently competent in the use of the PDMP and whom you either employ or have under contract with your pharmacy.
Privacy	Can a person request that a PDMP report be sent to a third party?
	Yes. An individual can request that data be sent to a third party by filling out an authorization-for-release form. The form needs to be notarized and sent to the PDMP office.
	Can I consult with other prescribers and dispensers listed on the PDMP report without patient authorization?
	According to HIPAA, this type of consultation is permitted because consultation is within the HIPAA definition of “treatment.”
	Can reports be printed for office or recordkeeping purposes?
	Yes; however, copying or providing this data to an outside entity is strictly prohibited.
	Can the PDMP report be used in court?
	PDMP reports are not evidence and should not be presented in court. The PDMP was designed to be used as a tool for gathering evidence.
	Can the practitioner show the requested profile to the patient?
	Yes. This is up to the professional judgment of the practitioner.

Privacy (cont'd)	How do I know that my private medical information is secure?
	A number of safeguards have been put in place to protect the confidentiality of patient medical information. All authorized users of the system must be registered and approved for access. Even after access to the system has been granted, to ensure confidentiality of patients' medical records, a multitude of statutory restrictions still apply. For instance, a practitioner submitting a request for patient information must be providing medical or pharmaceutical treatment to the patient in question or must be evaluating the need for such treatment. Likewise, members of the law enforcement community are only allowed to obtain private information in cases where an investigation dealing with controlled substances is already underway.
	How does HIPAA affect the PDMP?
	The disclosures of information to the PDMP by pharmacies are mandated and not discretionary.
	How is patient privacy protected?
	The PDMP is HIPAA-compliant. It has built-in security features designed to protect patient information. The HIPAA privacy regulations permit disclosure of protected health information, without authorization or opportunity to agree or object, in certain specified instances. These include disclosures for a covered person's own treatment, payment of claims, and health care operations of the covered entity. In addition, state laws may also address privacy concerns with regard to confidentiality of patient information. In some instances, state law may provide for more stringent restrictions on release of patient information than the HIPAA privacy regulations; in those cases, the state law takes precedence.
Training	How does training occur?
	The tutorials will be available on demand to train users on how to submit data to and how to obtain information from the PDMP.
	Is PDMP training available?
	Training can be presented at your facility or function by request.
	Is PDMP training mandatory?
	Completion of the tutorials is not required for practitioners and dispensers to access data stored by the PDMP.