



October 2020

# PRESCRIPTION DRUG MONITORING PROGRAMS

## Views on Usefulness and Challenges of Programs

# GAO Highlights

Highlights of [GAO-21-22](#), a report to congressional committees

## Why GAO Did This Study

Prescription medications—particularly when misused or overprescribed—can contribute to dangerous drug interactions, substance use disorder, overdoses, and deaths. The federal government has identified PDMPs as key tools to help ensure the safe and appropriate prescribing of opioids and other controlled substances.

The Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act includes a provision for GAO to study the operation of PDMPs. In this report, GAO describes (1) physicians' views on the usefulness of PDMPs when making patient care decisions; and (2) challenges to using PDMPs when making patient care decisions, as well as state and federal efforts to address these challenges.

GAO interviewed 31 physicians in 10 selected states and PDMP officials in nine of the 10 states. The selected states vary geographically and by other factors such as overdose death rates. GAO selected physicians from medical specialties that prescribe opioids. GAO also conducted interviews with relevant national organizations, organizations representing pharmacists, and officials from federal agencies that support PDMPs, and reviewed relevant federal strategy documents and grant announcements. GAO received technical comments on a draft of this report from HHS, DOJ, and the Office of National Drug Control Policy, and incorporated them as appropriate.

View [GAO-21-22](#). For more information, contact Alyssa M. Hundrup, (202) 512-7114 or [HundrupA@gao.gov](mailto:HundrupA@gao.gov).

October 2020

# PRESCRIPTION DRUG MONITORING PROGRAMS

## Views on Usefulness and Challenges of Programs

### What GAO Found

Physicians GAO interviewed generally found prescription drug monitoring programs (PDMPs) to be useful in preventing drug misuse and potentially dangerous drug prescribing. PDMPs are state-operated electronic databases that track prescriptions patients receive for opioids or other medications that are at risk of being misused. Most of the 31 physicians GAO interviewed said PDMP information helped them identify potential doctor shopping (when patients inappropriately seek medications from multiple physicians) and avoid potentially dangerous drug prescribing (such as dangerous drug combinations or high cumulative amounts). About half of the physicians also found PDMPs useful for providing overall patient care. Some of these physicians said their PDMPs provided more comprehensive information on patients' prescription histories than was available in patients' electronic health records (EHR). Physicians described how they could use PDMP information to determine which medications a patient had received and to discuss with patients the risks or benefits of treatment options.

Physicians identified the lack of integration of PDMP information into EHR systems as a key challenge for most effectively using PDMPs for patient care. With integration, physicians can access PDMP information within EHR systems they use, rather than accessing the PDMP separately. Most of the physicians GAO interviewed said their PDMP was not integrated with their EHR system and accessing the PDMP separately was a challenge. Some stakeholders knowledgeable about PDMPs said the extra time it takes to search the PDMP without integration could place a significant time burden on some physicians, such as those working in an emergency department in which time may be limited.

### Steps Reported by Physicians and Prescription Drug Monitoring Program (PDMP) Officials to Search PDMPs Using Non-integrated and Integrated Approaches

#### PDMP NOT INTEGRATED INTO EHR

##### ESTIMATED TIME: 3-5 MINUTES

- Log into electronic health record (EHR) system and pull up patient's record.
- Pull up PDMP website in a web browser.
- Log into PDMP web site.
- Refer to EHR for patient's name and birthdate.
- Return to PDMP website, input patient's name and birthdate.
- Click search button and wait for results.
- If multiple patient record matches, select correct record(s).
- Obtain, print, and review PDMP report.

#### PDMP INTEGRATED INTO EHR

##### ESTIMATED TIME: 2-15 SECONDS

- Log into EHR system and pull up patient's record.
- Click "PDMP" button in patient's EHR record.
- View returned static PDMP report in patient's EHR record.

Source: GAO analysis of interviews with physicians and PDMP officials. | GAO-21-22

State and federal agencies are taking steps to improve PDMP integration with EHR systems. For example, state officials from nine of the 10 states in GAO's review described efforts to facilitate integration of PDMP information into EHRs. Federal agencies that support PDMPs, including the Department of Justice (DOJ) and Department of Health and Human Services (HHS), have also made funding and technical support available to states to help improve integration.

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## Abbreviations

CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare & Medicaid Services
DOJ	Department of Justice
EHR	electronic health record
HHS	Department of Health and Human Services
HIE	health information exchange
HIPAA	Health Insurance Portability and Accountability Act of 1996
IHS	Indian Health Service
ONC	Office of the National Coordinator for Health Information Technology
PDMP	prescription drug monitoring program
PMP InterConnect	Prescription Monitoring Program InterConnect
SAMHSA	Substance Abuse and Mental Health Services Administration
SUPPORT Act	Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act
VA	Department of Veterans Affairs

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October 1, 2020

The Honorable Chuck Grassley  
Chairman  
The Honorable Ron Wyden  
Ranking Member  
Committee on Finance  
United States Senate

The Honorable Frank Pallone, Jr.  
Chairman  
The Honorable Greg Walden  
Republican Leader  
Committee on Energy and Commerce  
House of Representatives

Prescription medications—particularly when misused or overprescribed—can contribute to dangerous drug interactions, substance use disorder, overdoses, and deaths.<sup>1</sup> According to the Substance Abuse and Mental Health Services Administration (SAMHSA), the most commonly misused prescription medications were opioid pain medications, which were misused by an estimated 9.9 million people in 2018.<sup>2</sup> Prescription opioids

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<sup>1</sup>According to the Centers for Disease Control and Prevention (CDC), prescription drug misuse is when an individual uses a prescription drug in any way not directed by the prescriber. This includes using a prescription drug that was prescribed to another person (known as “diversion”) or using it in an amount, frequency, duration, or any other way not directed by the prescriber. In March 2020, GAO reported on drug misuse—including illicit drug use and prescription drug misuse—and stated the issue will be added to GAO’s High-Risk List in 2021. The High-Risk List highlights federal programs and operations that we have determined are in need of transformation, and also names federal programs and operations that are vulnerable to waste, fraud, abuse, and mismanagement. See *Drug Misuse: Sustained National Efforts Are Necessary for Prevention, Response, and Recovery*, [GAO-20-474](#) (Washington, D.C.: Mar. 26, 2020)

<sup>2</sup>Substance Abuse and Mental Health Services Administration, *Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey on Drug Use and Health*, (Rockville, MD.: Aug. 2019). Survey results reflect people aged 12 or older in the civilian, noninstitutionalized population of the United States. Data for 2018 were the most recent available at the time of our review.

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were involved in nearly 15,000 overdose deaths in 2018, according to the Centers for Disease Control and Prevention (CDC).<sup>3</sup>

To help ensure safe and appropriate prescribing of prescription medications, the federal government has supported the use of prescription drug monitoring programs (PDMP). The 2020 National Drug Control Strategy, which is intended to guide the federal government's national drug control policy, states that expanding the use of PDMPs is a fundamental element of the nation's efforts to reduce drug overdose deaths. PDMPs are state-run electronic databases that allow health care providers, such as physicians and pharmacists, to review information on prescriptions for opioids and other controlled substances that their patients have previously received. Each state's PDMP collects and stores information on patients' prescriptions dispensed in that state.

Providers can check information in their state's PDMP—and sometimes information from other states' PDMPs as well. The information in PDMPs may help to inform providers' decisions regarding patient care, such as decisions about whether or not to prescribe a controlled substance. Law enforcement agencies may also use information from state PDMPs under certain conditions for criminal investigations. Most PDMPs are operated by state pharmacy boards, state departments of health, professional licensing agencies, or state law enforcement agencies. Currently, all 50 states, the District of Columbia, Puerto Rico, and Guam maintain a PDMP within their borders.<sup>4</sup>

The Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (SUPPORT Act) includes a provision for GAO to examine the operation of PDMPs.<sup>5</sup> This report describes

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<sup>3</sup>N. Wilson, M. Kariisa, P. Seth, H. Smith, N. Davis, "Drug and Opioid-Involved Overdose Deaths—United States, 2017–2018." CDC Morbidity and Mortality Weekly Report. vol. 69: 290–297 (2020). Prescription opioids include methadone, natural, and semisynthetic opioids. Natural opioids include morphine and codeine. Semisynthetic opioids include oxycodone, hydrocodone, hydromorphone, and oxymorphone.

<sup>4</sup>Missouri currently does not have a statewide PDMP; however, St. Louis County launched a voluntary PDMP in 2017 that covers approximately 85 percent of Missouri's population. In addition to PDMPs operated within states, the Defense Health Agency also maintains a PDMP for U.S. military health care facilities.

<sup>5</sup>Pub. L. No. 115-271, § 5042(d), 132 Stat. 3894, 3971 (2018).

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1. physicians' views on the usefulness of PDMPs when making patient care decisions, and
  2. challenges to using PDMPs when making patient care decisions, as well as state and federal efforts to address these challenges.

To determine physicians' views on the usefulness of PDMPs when making patient care decisions, we selected 10 states to review.<sup>6</sup> We selected these states to reflect variation in (1) geographic location (reflected by U.S. Census Bureau divisions), (2) types of state PDMP administration (reflected by the different types of entities responsible for operating the PDMP), (3) opioid prescribing and overdose death rates, (4) whether state PDMPs received federal funding, (5) state regulations for prescriber PDMP use, and (6) the extent to which a state PDMP provides access to PDMP information for other states (see app. I). In each of the 10 states we selected, we interviewed two to four physicians specializing in fields of medicine that involve prescribing opioids, which makes them likely to use PDMPs on a regular basis.<sup>7</sup> In all, we interviewed 31 physicians in the 10 states about their use of PDMPs when providing clinical care, among other things. For purposes of summarizing our physician interviews, we use "some" to indicate 3 to 13 physicians, "about half" to indicate 14 to 17 physicians, "most" to indicate 18 to 27 physicians, and "nearly all" to indicate 28 to 31 physicians.

While physicians were the primary focus of our work, we also interviewed representatives from three national pharmacy associations (including four practicing pharmacists) to learn about pharmacists' experiences using PDMPs when providing clinical care, and to supplement the information

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<sup>6</sup>The 10 states we selected are Arizona, Indiana, Maine, Nebraska, New York, Oklahoma, Oregon, Tennessee, Washington, and West Virginia.

<sup>7</sup>We selected and interviewed physicians recommended by state chapters that were affiliated with or recommended by the following national provider associations: the American Academy of Family Physicians, the American Academy of Neurology, the American Academy of Orthopedic Surgeons, the American College of Emergency Physicians, the American College of Physicians, the American Psychiatric Association, and the American Society of Interventional Pain Physicians. We interviewed physicians represented by at least two provider association state chapters in each state, which varied by state to ensure that we spoke with physicians from all seven specialties represented by these provider associations.

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we received from physicians.<sup>8</sup> Information obtained from these interviews cannot be generalized to all physicians, pharmacists, or other health care providers. In addition, we also interviewed other stakeholders who are knowledgeable about PDMPs or prescription drug misuse, and we reviewed relevant published literature on the use of PDMPs in health care settings to supplement our interviews.<sup>9</sup>

To identify challenges to using PDMPs when making patient care decisions and state and federal efforts to address these challenges, we interviewed physicians in the 10 selected states and representatives from pharmacy associations, as described above. To learn about state-level efforts to address these challenges, we interviewed PDMP officials from nine of the selected states.<sup>10</sup> In interviews with the state PDMP officials, we asked about their states' PDMP operations, access standards and data security, and steps they were taking to address challenges identified by providers in their states. Findings based on these interviews cannot be generalized to all state PDMPs. We also reviewed information on each state PDMP compiled by the Department of Justice (DOJ) funded Prescription Drug Monitoring Program Training and Technical Assistance Center.

To learn about federal-level efforts to address challenges identified by the physicians, we interviewed officials from the Office of National Drug Control Policy, the Department of Health and Human Services (HHS),

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<sup>8</sup>We interviewed representatives from the National Association of Chain Drug Stores, the National Community Pharmacists Association, and the American Pharmacists Association. We also interviewed four pharmacists as part of our American Pharmacists Association interview.

<sup>9</sup>Stakeholders we interviewed include the following associations: American Medical Association; National Association of Boards of Pharmacy; National Association of State Controlled Substances Authorities; and Association of State and Territorial Health Officials. We also interviewed individuals who have expertise regarding PDMPs. For our literature review, we limited our search to articles published from the fall of 2017 through 2019 to capture the most recently available articles at the time our search was conducted. We searched ProQuest, a multidisciplinary database that includes health and social sciences peer-reviewed studies, dissertations, conference papers, and trade and news articles. Additionally, we searched the Harvard Kennedy Think Tank search engine for papers. We searched for "prescription drug monitoring" or "PDMP" with permutations of terms such as "interoperability," "operability," "exchange," "integrate," "implement," "patient match," "privacy," "security," "access," or "policy." In total, we reviewed 52 identified articles.

<sup>10</sup>At the time of our interviews in March and April of 2020, PDMP officials from New York State were unavailable.



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and DOJ.<sup>11</sup> Within HHS, we interviewed officials from CDC, the Centers for Medicare & Medicaid Services (CMS), the Office of the National Coordinator of Health Information Technology (ONC), and SAMHSA. Within DOJ, we interviewed officials from the Bureau of Justice Assistance. We also reviewed federal agency documents related to HHS and DOJ actions that support PDMPs, including strategy documents, requests for proposals, and grant announcements. In addition to these interviews, and as noted previously, we also interviewed other stakeholders who have expertise in this field and reviewed published literature.

We conducted this performance audit from July 2019 through September 2020 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

### PDMP Information

In general, PDMPs collect and store information on certain prescription medications that have been dispensed to patients in each state. Because PDMPs are state-run, the information contained in each state PDMP can vary based on state laws and regulations, and other factors. For example, the specific prescribed medications tracked by state PDMPs vary based on state law, but typically cover at least schedules II through IV controlled substances.<sup>12</sup> Controlled substances are governed at the federal level by the Controlled Substances Act, which assigns them to one of five schedules based on a substance's medical use, potential for abuse, and risk of dependence (see table 1).<sup>13</sup>

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<sup>11</sup>The Office of National Drug Control Policy is responsible for overseeing and coordinating the development and implementation of U.S. drug control policy across the federal government. We also obtained information from the Department of Veterans Affairs (VA) and HHS's Indian Health Service (IHS) to clarify VA and IHS submission of information to state PDMPs.

<sup>12</sup>In addition to controlled substances, certain states also collect information about certain non-controlled substances that are of concern, or on all prescription drugs.

<sup>13</sup>Pub. L. No. 91-513, tit. II, 84 Stat. 1236, 1242-84 (1970) (codified, as amended, at 21 U.S.C. § 801 et seq.).

**Table 1: Controlled Substances Act Schedules**

Schedule	Description	Examples
Schedule I	No accepted medical use, are unsafe, and hold a high potential for abuse.	Heroin and LSD
Schedule II	Accepted medical use, high potential for abuse, abuse could lead to severe psychological or physical dependence.	Hydrocodone, methadone, Demerol, OxyContin, Percocet, morphine, codeine, and amphetamine.
Schedule III	Accepted medical use, less potential for abuse than schedule I or II substances, abuse may lead to moderate or low physical dependence or high psychological dependence.	Tylenol with Codeine and anabolic steroids.
Schedule IV	Accepted medical use, low potential for abuse relative to schedule III substances, abuse may lead to limited physical or psychological dependence relative to schedule III substances.	Xanax, Klonopin, Valium, and Ativan.
Schedule V	Accepted medical use, low potential for abuse relative to schedule IV substances, abuse may lead to limited physical or psychological dependence relative to schedule IV substances.	Cough syrups containing codeine.

Sources: 21 U.S.C. § 812, and the U.S. Drug Enforcement Administration.

Note: Medical use determination is based on whether substances have a currently accepted medical use in treatment in the United States.

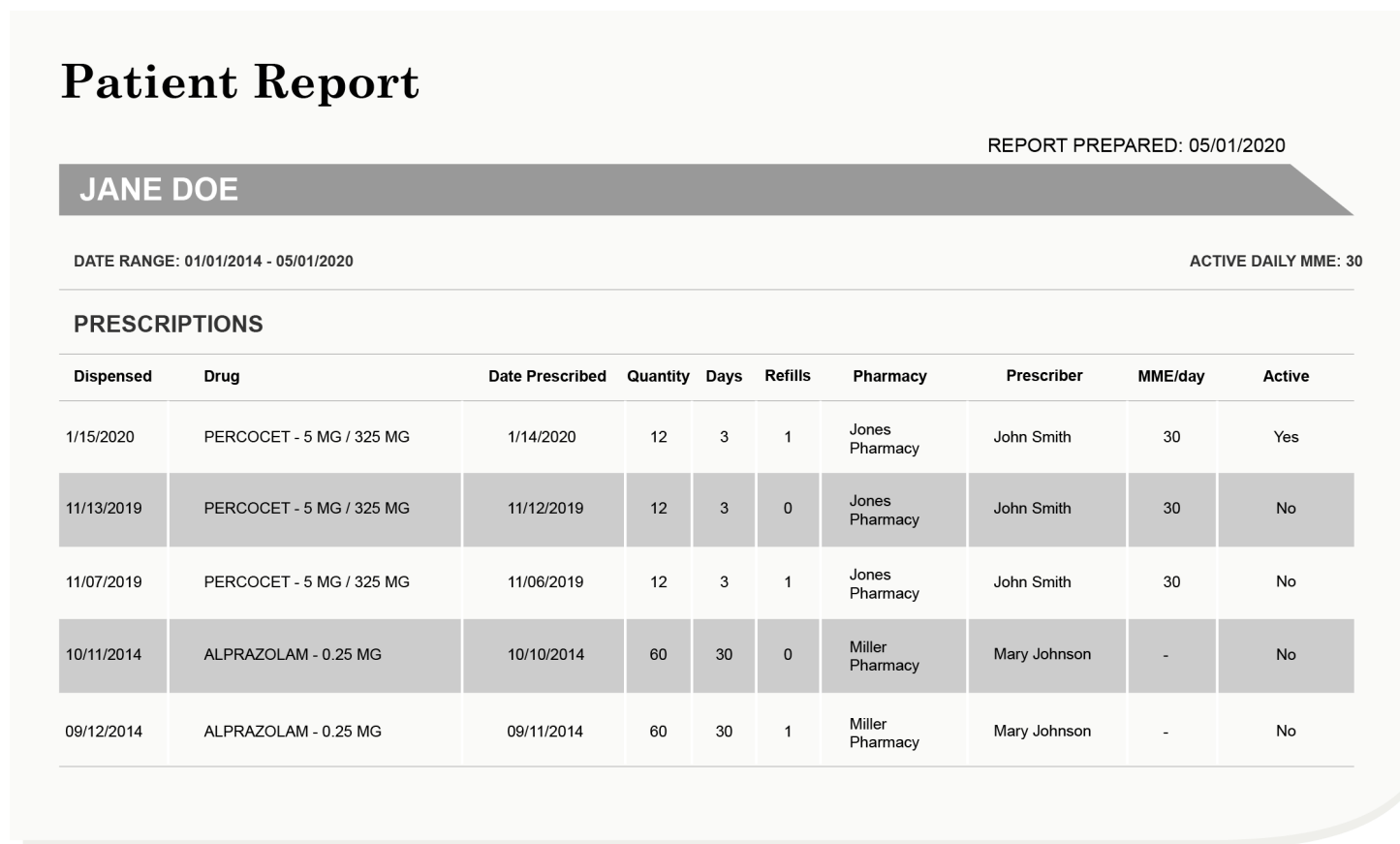
Information on some medications dispensed from certain facilities cannot be submitted to state PDMPs without a patient’s consent. Specifically, federal law prohibits federally-assisted substance use disorder treatment programs from disclosing patient records that would identify a patient as having or having had a substance use disorder, including reporting such information to state PDMPs, without patient consent.<sup>14</sup>

When health care providers check a PDMP, they generally see a report containing each of their patient’s prescriptions. While the specific contents of PDMP reports vary by state, they can include a list of controlled substances—and sometimes other prescription medications—dispensed to a patient over a given period of time. PDMP reports generally contain information about the health care providers who have written prescriptions for a patient, the medications prescribed, and the number of refills of medication remaining (see fig. 1). PDMP reports may also

<sup>14</sup>This requirement is commonly referred to as “Part 2” for the regulations in which it is codified (42 C.F.R. Part 2). Specifically, Part 2 applies to federally assisted individuals, entities, and identified units in medical facilities that hold themselves out as providing and provide diagnosis, treatment, or referral for treatment for substance use disorder. “Federally assisted” encompasses a broad set of activities, including management by a federal office or agency, receipt of any federal funding, or registration to dispense controlled substances related to the treatment of substance use disorder.

include summary information for a patient, such as the total number of prescriptions or prescribers, or the patient's risk score, which indicates the possibility of medication misuse or overdose by a patient. Risk scores may be calculated by vendors that operate PDMPs for states.<sup>15</sup>

Figure 1: Example Prescription Drug Monitoring Program Patient Report



Source: GAO. | GAO-21-22

Note: MME/day stands for morphine milligram equivalents per day, and is the amount of morphine a prescribed daily opioid dose is equal to. Calculating the MME/day accounts for differences in opioid drug type and strength. According to the CDC, the total active MME/day is often used to estimate overdose potential for the amount of opioids prescribed at a particular time.

<sup>15</sup>Private vendors generally calculate these risk scores. The methods for calculating the scores are often considered to be proprietary, and as a result those methods may not be disclosed.

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## PDMP Data Submission and Use of PDMP Information

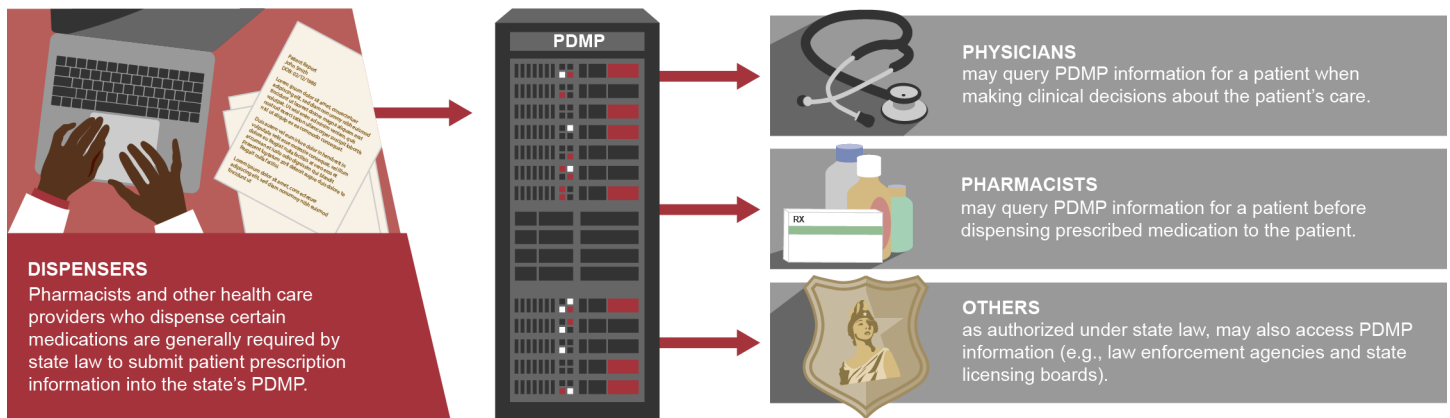
Pharmacists and other health care providers who dispense certain medications are generally required by state law to submit patient prescription information into the state's PDMP. Then, health care providers who prescribe medications and others (subject to state law) may access and use information stored in the PDMP for various reasons. For example, authorized physicians may check the PDMP for information when making patient care decisions, including when prescribing medications. In addition, authorized pharmacists and other authorized users who dispense medications may also check the PDMP before dispensing medications to a patient.

Depending on state law, providers may be required to check the PDMP in certain circumstances. For example, a provider may be required to check the PDMP when prescribing an opioid medication. Some states also allow providers to delegate the task of checking the PDMP to someone else in their office, such as a medical assistant or other staff. Finally, in addition to health care providers who prescribe and dispense medications, some state laws authorize others to access and use PDMP information, such as law enforcement agencies and state licensing boards.<sup>16</sup> Figure 2 summarizes PDMP information submission and use.

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<sup>16</sup>Depending on individual state laws, law enforcement investigators, licensing boards, and other entities may also have access to a state's PDMP under certain circumstances. Law enforcement investigators may use PDMP information, subject to requirements under state law, to investigate or prosecute cases involving the diversion or other illegal use of prescription controlled substances. Licensing boards may use PDMP information to identify inappropriate prescribing by physicians. In addition, state public health departments may also use de-identified PDMP data for public health purposes, such as to track trends in substance use disorder or identify areas of the state that may be at high risk for abuse or diversion of controlled substances. This report is focused on the use of PDMPs by health care providers when providing clinical care to patients, and therefore these uses of PDMPs are outside the scope of this report.

**Figure 2: PDMP Information Submission and Use**



Source: GAO. | GAO-21-22

Note: Depending on individual state laws, physicians or pharmacists may be required to query the prescription drug monitoring program (PDMP) in certain situations.

## Accessing the PDMP

Health care providers may access PDMPs in different ways. In some cases, physicians and other authorized health care providers access a PDMP by using a web browser to sign into the PDMP's website with a username and password. Some providers may access the PDMP website by clicking a link to the PDMP website within the practice's electronic health record (EHR) or other health IT system that will take physicians directly to the PDMP's website, where they can sign in with a username and password.

Some health care providers may also be able to access PDMP information directly within their EHR or other health IT system. In such integrated approaches, providers are able to access PDMP information directly within the EHR or other health IT system that they use for managing their daily workflow for patient care, without requiring the providers to access the PDMP in a separate web browser.<sup>17</sup> Integration depends on various factors, such as integration options offered by the state or the capabilities of a provider's EHR system.

## Interstate Sharing of PDMP Information

Most states make their PDMP information available to other states—such as neighboring states or more broadly—so that providers can see

<sup>17</sup>For the purpose of this report, integration refers to a setup where a health care provider is able to access PDMP information within the same workflow of its health IT system, such as an EHR, without needing to use a separate system or web browser to access the PDMP.

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information about prescriptions that patients may have obtained in other states. State PDMPs may share all of the information in patients' PDMP reports with other states—so out-of-state providers can see the same information as in-state providers—or they may share a portion of the information. Most states use one or both of the following two data-sharing hubs to facilitate the sharing of PDMP information between states, allowing providers to query other states' PDMP information from within their own state PDMP:

- **Prescription Monitoring Program (PMP) InterConnect:** The National Association of Boards of Pharmacy created PMP InterConnect, in conjunction with a vendor. According to the National Association of Boards of Pharmacy, as of August 2020, PDMPs in 48 states, the District of Columbia, Puerto Rico, and the Defense Health Agency were active participants in PMP InterConnect.
- **RxCheck:** RxCheck is funded by DOJ's Bureau of Justice Assistance and is governed by the RxCheck Governance Board. As of August 2020, 32 states and the District of Columbia have operating connections to RxCheck.

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## Federal Efforts to Support PDMPs

Federal agencies have historically played a role in supporting the establishment and enhancement of state PDMPs. DOJ and HHS are the primary federal agencies that provide support to state PDMPs, and this support includes funding, technical guidance, and data-sharing resources. In addition to funding the RxCheck PDMP data-sharing hub, DOJ provides grant funding, and HHS provides support through various HHS offices and other entities. Examples of DOJ and HHS PDMP support efforts include the following:

- DOJ provides funding to state PDMPs through the Harold Rogers Prescription Drug Monitoring Program grant.<sup>18</sup>

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<sup>18</sup>These grants are awarded to state or local governments with operational PDMPs, or that have pending or enacted legislation requiring submission of controlled substance prescription data to an authorized state or local agency. Funds may be used to, among other things, establish or enhance a PDMP; facilitate the exchange of information and collection of data on prescriptions and other scheduled chemical products; and facilitate electronic information sharing among states. Since 2018, grant recipients agree to ensure that their PDMP system has the capacity to exchange data with other PDMP systems via the RxCheck hub.

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- CDC provides funding for states' PDMPs through its Overdose Data to Action program, and also provides technical assistance to states.<sup>19</sup>
  - CMS provides enhanced Medicaid funding to states for federal fiscal years 2019 and 2020 for certain expenditures related to the design, development, and implementation of a qualified PDMP.
  - ONC provides technical and educational support to federal partners and states on health IT-related aspects of PDMPs.
  - SAMHSA provides grant funding, such as the State Targeted Response to the Opioid Crisis Grants, which can be used to support PDMPs.<sup>20</sup>

Some federal programs have established conditions for the receipt of certain federal funding to further facilitate or promote the use of PDMPs. For example, under the SUPPORT Act, Medicaid providers generally will be required to begin checking their state's PDMP before prescribing a controlled substance to a Medicaid beneficiary beginning in October 2021. In addition, certain Medicare providers also receive incentive payments based on criteria that include querying PDMPs.<sup>21</sup>

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## Physicians Found PDMPs Useful for Patient Care and Found Accuracy, Security, and Access Generally Sufficient

Physicians we interviewed in the 10 selected states generally said PDMPs have been useful in preventing drug misuse and potentially dangerous drug prescribing. They also said PDMPs helped them provide overall patient care because PDMPs can provide more comprehensive patient prescription drug histories than would otherwise be available. In addition, physicians we interviewed generally found PDMP accuracy, security, and access to be sufficient for purposes of patient care.

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<sup>19</sup>CDC's Overdose Data to Action program awards funds via cooperative agreements to state, territorial, county, and city health departments to, among other things, help strengthen PDMPs.

<sup>20</sup>The State Targeted Response to the Opioid Crisis Grants were awarded to states and territories. Grant funds must primarily be used to support prevention, treatment, and recovery support activities. States could also use funds to enhance their PDMPs to increase use of PDMP information.

<sup>21</sup>The Promoting Interoperability Programs (previously known as the Medicare and Medicaid EHR Incentive Programs) provides incentive payments to eligible professionals and hospitals for the adoption and meaningful use of certified EHR technology. Providers report on a set of required measures and receive points based on their performance on the measures. Medicare providers are able to receive bonus points for the optional measure of querying a PDMP.

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## Physicians Generally Found PDMPs Useful for Preventing Drug Misuse and Dangerous Prescribing

Physicians we interviewed in the 10 selected states generally stated that checking the state's PDMP for their patients played a role in preventing patient misuse of prescription drugs, such as opioids. Most of the 31 physicians we spoke with said that PDMP information helped them identify patient behavior that could potentially indicate doctor shopping or drug-seeking—forms of patient drug misuse that occur when a patient intentionally seeks to obtain multiple prescriptions for the same or similar drugs from multiple physicians. For example, one emergency physician described the PDMP as “very useful,” stating that the PDMP information makes it apparent if a patient is doctor shopping. Some of the physicians noted they had experienced a decrease over time in the frequency of suspicious behaviors among patients consistent with doctor shopping, which they attributed to use of the PDMP by physicians.<sup>22</sup> In addition, two physicians said that patients' PDMP reports contained risk scores indicating a patient's potential risk for abuse, which they found helpful when reviewing patients' prescriptions.

Most of the physicians we interviewed also stated that using PDMPs helped them to avoid potentially dangerous prescribing, including prescribing certain medications that become dangerous when taken together or in high cumulative doses. For example, physicians said that the PDMP addressed their concerns about duplicating opioid prescriptions that patients received from other physicians, which could lead to a high cumulative dose and an increased risk of overdoses or dependence.

Physicians we interviewed across all of the seven specialties in our review also told us that PDMPs had positive influences in their practice beyond reducing duplicate opioid prescriptions. Some physicians described the dangers of prescribing opioids in conjunction with certain other medications, such as benzodiazepines, and how in using the PDMP they were alerted to medications a patient was prescribed by another physician that could cause potentially dangerous interactions.<sup>23</sup> Some physicians also noted that they specifically used the PDMP to screen patients for these potential medication interactions. Physicians stated that

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<sup>22</sup>One physician also noted that increased public awareness about the dangers of taking opioid medications may have played a role in patients being more cautious in taking opioids and not requesting opioid medications as frequently.

<sup>23</sup>Emergency physicians, pain specialists, family medicine physicians, and an orthopedic surgeon we interviewed noted that interactions between opioids and benzodiazepines were among the most significant adverse interactions to be avoided when prescribing controlled substances, making PDMPs, which track these medications, especially helpful.



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when they saw such information in the PDMP, they would talk with the patient or other prescribing physician to discuss alternate treatment options or discuss with the patient the potential risk of overdose if no other treatment options were available.

**Use of the prescription drug monitoring program (PDMP) to prevent unnecessary duplicate prescriptions:** One emergency physician told us that the day before our interview, he had met with a patient who seemed like an appropriate candidate for an opioid prescription. However, the patient's PDMP report revealed that the patient had recently received 70 pills of an opioid medication, prescribed by another physician. The physician discussed the PDMP report with the patient to better understand the patient's medication needs, and based on that discussion did not write an additional opioid prescription.

Source: GAO summary of physician interview. | GAO-21-22

Similarly, the four pharmacists we interviewed described how using PDMPs in the pharmacy setting played a role in preventing patient misuse of prescription drugs and potentially dangerous prescribing. Pharmacists stated that information in PDMPs could help them verify patients' needs. Pharmacists also described how the PDMP allowed them to see if patients were receiving concurrent opioid prescriptions. Pharmacists also noted that the PDMP could help them see prescriptions for dangerous drug combinations from multiple physicians. With this information, they can alert the prescribing physicians to their concerns about these prescription combinations. Two of the four practicing pharmacists we interviewed noted that the PDMP helped them identify if patients were being truthful about their medication history and, as one pharmacist noted, provided assurance that patients visiting multiple pharmacies were not filling duplicate prescriptions, but rather trying to get the best prices for each prescription.

Some physicians described how their states had implemented certain helpful features within their PDMPs. Physicians described how the PDMP reports contained summary information or risk scores that helped them quickly see if a patient was receiving a combination of prescriptions that caused an increased overdose risk or was otherwise potentially dangerous.<sup>24</sup> Four physicians also noted that their PDMP generated

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<sup>24</sup>This is consistent with the findings in several recent studies, which presented physicians with sample PDMP reports that included various summary and analytical features. Gillian Leichtling, C. Hildebran, K. Novak, L. Alley, S. Doyle, C. Reilly, and S.G. Weiner, "Physician Responses to Enhanced Prescription Drug Monitoring Program Profiles," *Pain Medicine* (2019): 1-13; Scott G. Weiner, K.M. Sherritt, Z. Tseng, and J. Tripathi, "Advanced Visualizations to Interpret Prescription Drug Monitoring Program Information," *Drug and Alcohol Dependence* 201 (2019): 260-265.

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information that, for example, compared their prescribing to other physicians in the state or summarized their prescribing behavior, and that such information was helpful. Some physicians stated that they did not see summary information, alerts, or risk scores when checking the PDMP, and that they would find such features helpful for quickly understanding a patient's PDMP information. Representatives we interviewed from all three pharmacy associations said that PDMP features such as summary information and risk scores helped at least some of the pharmacists they represented, and they favored expanding the use of these features.

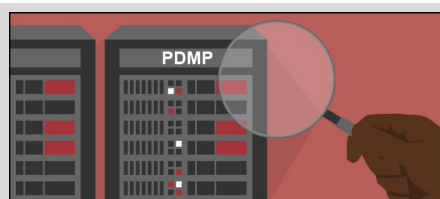
However, three physicians told us that these features were less helpful in their practice because they did not consider patient risk scores relevant to their practice, or they had no way of stopping repeated alerts in cases where such alerts were unnecessary. In addition, some physicians stated that they did not find alerts or summary PDMP information helpful. These physicians cited concerns such as summary reports describing them as high opioid prescribers, even though they said that such prescribing was appropriate because they had patients in need of pain medication, such as post-surgical patients.

Most physicians we interviewed generally found PDMPs to be useful in preventing prescription drug misuse and dangerous prescribing, but some said PDMPs were less useful for them because of the nature of their medical specialty or practice. One orthopedic surgeon said that he only prescribes pain medication for acute pain following surgery, and prescribes such medication regardless of a patient's prescription history, making the PDMP of limited value to him. Another physician stated that his neurology practice does not prescribe any opioids, so the information in the PDMP is less relevant to the care he provides.

**Other approaches to addressing drug misuse and dangerous prescribing:** Stakeholders knowledgeable about prescription drug misuse or prescription drug monitoring programs (PDMPs) whom we interviewed noted that use of PDMPs is one of multiple factors that could help prevent drug misuse and potentially dangerous drug prescribing. According to these stakeholders, physicians have become more aware of prescription risks, and other factors such as improved provider education have also affected the prescribing of opioids and other controlled substances. As a result, it is difficult to determine if changes in the misuse of prescription medications, including overdoses, are being influenced specifically by PDMPs.

Source: GAO analysis of stakeholder interviews. | GAO-21-22

## Physicians Also Found PDMPs Helpful for Providing Overall Patient Care



### Research on the effect of prescription drug monitoring programs (PDMPs)

The 52 studies we reviewed had mixed results regarding the effectiveness of PDMPs at addressing prescription drug misuse. Among the studies we reviewed, one study found that PDMPs were effective if physicians were required to check the PDMP prior to filling a prescription.<sup>a</sup> Other findings included that there was not sufficient evidence to connect PDMP implementation to changes in overdose rates, or that emergency medicine physicians were unlikely to change their treatment decisions regarding opioids after reviewing PDMP information.<sup>b</sup>

Source: GAO. | GAO-21-22

<sup>a</sup>For example, see Ian Ayres and A. Jalal, "The Impact of Prescription Drug Monitoring Programs on U.S. Opioid Prescriptions," *Journal of Law, Medicine, & Ethics* 46 (2018):387-403.

<sup>b</sup>For example, see David S. Fink, J.P. Schleimer, A. Sarvet, K.K. Grover, C. Delcher, A. Castillo-Carniglia, J. H. Kim, A. E. Rivera-Aguirre, S.G. Henry, S.S. Martins, and M. Cerda, "Association Between Prescription Drug Monitoring Programs and Nonfatal Drug Overdoses: A Systematic Review," *Annals of Internal Medicine* (2018) 168 vol 783-790; Aaron Landau, M. Lynch, C. Callaway, and B. Suffoletto, "How Are Real-time Opioid Prescribing Cognitions by Emergency Providers Influenced by Reviewing the State Prescription Drug Monitoring Program?" *Pain Medicine* (2019) 20: vol 955-960.

About half of the physicians we interviewed said they also found PDMPs useful for providing overall patient care. While most PDMPs primarily track prescriptions for controlled substances, some of these physicians said that PDMPs still provided more comprehensive information on patients' prescription drug histories than would be otherwise available with information from EHRs and patients' self-reporting. According to the physicians we interviewed, PDMP information was useful for providing overall patient care in several ways. For example, some physicians described the following:

- Physicians described how they could use the information to determine which medications a patient had received and to discuss with patients the risks or benefits of treatment options that might interact with PDMP-tracked medications (e.g., a physician might discuss a pain management contract).<sup>25</sup>
- Physicians also noted that they used the PDMP report as a starting point to have conversations about the patient's care. Such conversations could include using the PDMP report to help the physician quickly become familiar with a patient's complex medical conditions or prescription history.
- Physicians said that medication reconciliation is especially useful to coordinate care, such as when a patient is being discharged from the hospital and receiving care from multiple physicians.<sup>26</sup>
- Physicians also noted that the PDMP information could help them identify instances where a patient may have switched medications because of side effects, and could prompt physicians to ask about these specific issues and make better treatment decisions in the future.

Some physicians also described how the PDMP could provide longitudinal health information, that is, health information over time, for a patient, helping to provide details of medications or physicians seen that a

<sup>25</sup>A pain management contract is an agreement between a patient and doctor that may be made for patients receiving long-term treatment with opioids or other controlled substances. Such a contract may contain statements to help ensure patients understand their role and responsibilities regarding their treatment (e.g., how to obtain refills and conditions of medication use); the conditions under which their treatment may be terminated; and the responsibilities of the health care provider.

<sup>26</sup>Medication reconciliation is a process for creating the most complete and accurate list possible of a patient's current medications and comparing the list to those in the patient record or medication orders. This reconciliation is done to avoid medication errors such as omissions, duplications, dosing errors, or drug interactions.

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patient might have forgotten. For example, one physician described how he was able to use the PDMP to identify surgeons his patients have seen when the patients could not recall their surgeon's name. Other physicians described how the historical information in the PDMP could help them determine medications a patient could not remember, or treatments that did not work.

**Use of the prescription drug monitoring program (PDMP) to verify use of a valid prescription medication:** One physician told us about an incident where the PDMP helped verify that a patient had taken prescription medication correctly. The patient had received a controlled substance prescription from an orthopedic surgeon, but did not realize that the medication was a controlled substance that could show up on a drug test. The patient was subject to mandatory drug testing at work, and tested positive because he had been taking the medication as prescribed. The physician said that the patient was initially fired from his job because of the test result, but was reinstated after the patient's primary care physician reviewed the PDMP report and contacted the patient's employer to confirm that the drug was taken based on a medical prescription.

Source: GAO summary of physician interview. | GAO-21-22

## Physicians Generally Found PDMP Information to Be Sufficiently Accurate and Secure, and Access within Health Care Settings to Be Appropriate



### Perspectives on law enforcement access to prescription drug monitoring programs (PDMP)

Outside of health care settings, law enforcement agencies may access PDMP data under certain conditions for criminal investigations. Representatives from one pharmacy association noted that privacy advocates have raised concerns that law enforcement access to PDMP information could interfere with patient care, as law enforcement is not subject to responsibilities and penalties under the Health Insurance Portability and Accountability Act of 1996 (HIPAA) that health care professionals are required to follow to prevent unauthorized disclosure. The four pharmacists we interviewed described related concerns, including a lack of knowledge by law enforcement to correctly interpret PDMP information. One pharmacist we interviewed stated that a law enforcement officer told him that patients should never receive above a specific quantity of pills for a certain medication. The pharmacist said that this law enforcement officer's assessment was incorrect due to a lack of medical knowledge.

Source: GAO. | GAO-21-22

Most physicians generally found PDMP information to be sufficiently accurate to support patient care. For example, some physicians we interviewed specifically noted that PDMP information accurately reflected records of their patients' prescriptions, or that they had only seen rare inaccuracies. Physicians said information in the PDMP was consistent with their conversations with their patients. While some noted having experienced inaccurate information, they described these inaccuracies as being limited in nature. For example, several physicians said that they had experienced occasional administrative errors, such as name changes, omissions, or reporting delays. Otherwise, they found the PDMP information to be sufficiently accurate.

Nearly all of the physicians we interviewed described security features in the PDMP as sufficient, and most also indicated that they had not heard concerns from others. Physicians described registration, login, and password requirements for their state's PDMP, including security features such as automatic log-outs from the system and requirements for password changes.<sup>27</sup> However, some physicians stated that in a busy practice these security features can become cumbersome or time-consuming.

Physicians and pharmacists we interviewed generally stated that access to their state's PDMP was adequately controlled and that PDMPs could be accessed by the appropriate health care staff. Most physicians and pharmacists we interviewed indicated that the physicians, delegates, and pharmacy staff who had access to the PDMP were appropriate. Physicians had generally positive views about the value of delegates (often nurses or medical assistants) using PDMPs. Some physicians and pharmacists noted that the ability for delegates to access the PDMP was a significant time-saver for physicians in a busy practice. In contrast, two other physicians indicated that allowing delegates to have access to the PDMP increased risks to patient privacy by increasing the number of people with access to sensitive patient information. Some physicians noted other concerns with delegate access, describing how delegate access was not feasible in certain care settings or that they lacked the staff to act as delegates on their behalf. Some physicians also noted that

<sup>27</sup>Officials from one of the pharmacy associations we spoke with also noted that automatic log-out features in PDMPs could make them challenging for pharmacists to use, as it is time consuming to have to constantly log back into the system multiple times throughout the day.

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PDMP search history was either monitored by the state or open to audit, which helped ensure PDMP users' accountability.

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## Physicians Identified Lack of Integration with EHRs and Other PDMP Challenges, and State and Federal Officials Described Ongoing Efforts to Address Them

Physicians we interviewed identified lack of integration with EHRs as a key challenge to most effectively using PDMPs when making patient care decisions. They also described various other challenges, such as issues related to accessing PDMP information from other states and certain information not being reported to PDMPs. State PDMP officials and federal officials we interviewed described efforts they have undertaken to address these challenges.

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## Physicians Identified Lack of PDMP Integration with EHRs as a Key Challenge, and State and Federal Officials Reported Efforts to Increase Integration

Most of the 31 physicians we interviewed—practicing in nine of our 10 selected states—reported that their PDMP was not integrated into their EHRs. All of these physicians identified the lack of integration as a key challenge to most effectively using PDMPs when making patient care decisions. In general, they indicated that lack of integration was a challenge because they or other staff authorized to check the PDMP on their behalf had to separately log into and search their state PDMP's website, which some physicians said could take several minutes per patient. According to some of the physicians, this amount of time can make it difficult to check the PDMP during the time available for each patient visit, and can add up to a significant cumulative time burden for physicians who check the PDMP for a large number of patients. Some physicians described the process as "cumbersome" and others stated that it sometimes took additional time for administrative tasks like periodically resetting passwords. Some stakeholders who are knowledgeable about PDMPs indicated that separately searching the PDMP web site could place a significant time burden on some physicians and their practices—particularly those working in small practices with limited resources or in certain settings such as an emergency department in which time may be limited.

The remaining physicians we interviewed—those who reported that their PDMP was integrated into their EHRs—indicated that integration made it easier to access PDMP information compared to accessing information through the PDMP website. For example, one physician described

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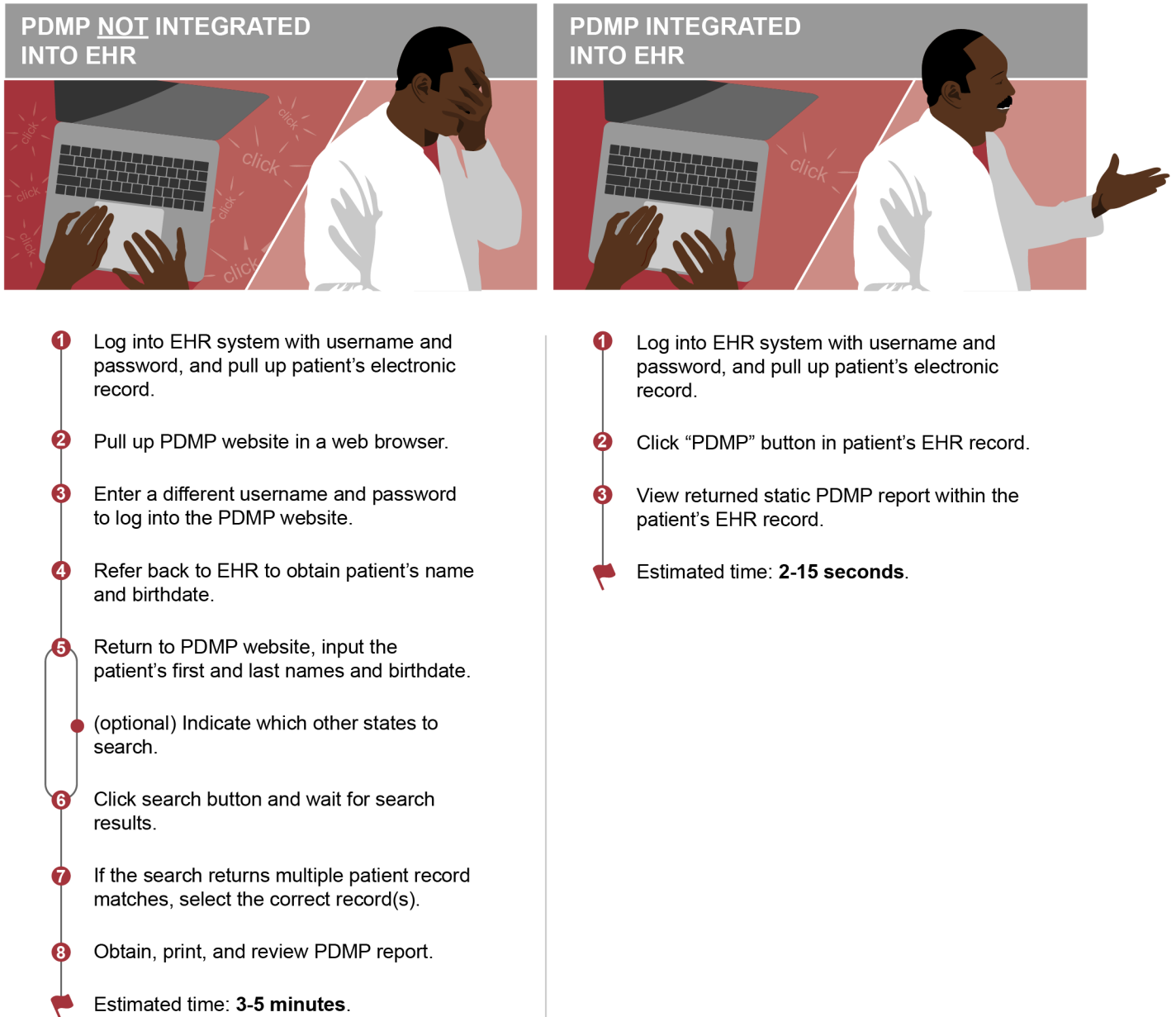
integration as a “game changer” because retrieving a patient’s information from the PDMP took them only a few seconds or computer clicks. According to this physician, with an integrated system, the PDMP information is easily accessed from within the same electronic systems that physicians already use as part of their regular daily practices, so using the PDMP requires little time. Figure 3 compares the steps and time it generally takes for a physician to query PDMP information for a patient when the PDMP is not integrated into their EHR versus when the PDMP is integrated into their EHR, based on interviews with physicians and PDMP officials.

**Lack of integration is a challenge:** One physician said the lack of prescription drug monitoring program (PDMP) integration is a perpetual complaint among emergency department physicians in his state, explaining that without integration it took 3 to 5 minutes and more than a dozen additional mouse clicks to get PDMP information for a given patient. Another physician stated that his practice needs integration to make PDMPs useful, and another emphasized the importance of making it easy for providers to access PDMPs.

**Integration is a time saver:** One family physician said his practice now has excellent integration between his PDMP and his EHR. He explained that his EHR automatically generates a PDMP report in real time when he clicks a button from within the patient’s EHR record, and said that this integration has led to significant cumulative time savings of an hour or more per day.

Source: GAO summary of interviews with physicians. | GAO-21-22

**Figure 3: Steps Reported by Physicians and PDMP Officials to Search PDMPs Using Non-integrated and Integrated Approaches**



Source: GAO analysis of interviews with physicians and PDMP officials. | GAO-21-22

Note: These are the general steps for each approach based on GAO interviews with 31 physicians and Prescription Drug Monitoring Program (PDMP) officials in nine of our 10 selected states. Actual steps may vary depending on a physician's electronic health record (EHR) system or a state's exact PDMP characteristics. An EHR is a digital version of a patient's medical record.



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Representatives from national pharmacy associations and practicing pharmacists we interviewed also generally reported that lack of integration of PDMP information into pharmacy health IT systems was a challenge because it meant they had to go to the separate PDMP website to access PDMP information, which disrupted their workflow. They said the extent to which PDMP information was integrated into pharmacy health IT systems varied across the country. Two of the four practicing pharmacists we interviewed, whose pharmacy health IT systems did not have integrated PDMP information, said their only option for accessing their PDMP was through the PDMP website, which required time-consuming steps outside of their typical workflow. A representative for one pharmacy association said they have been advocating for PDMP information to be integrated into physicians' and other providers' existing health IT workflows so that the providers do not have to take the additional time of separately accessing the PDMP.

State PDMP officials from nine of the 10 states described efforts their states are undertaking to facilitate integration of PDMP information into physicians' and other health care providers' health IT systems, although the approach to addressing integration varied by state.<sup>28</sup> For example, state options for integration varied in terms of the types of health IT systems that can be integrated, such as physicians' EHRs, and the technology used for integration.<sup>29</sup> However, while states can make technology available to physicians and other providers to facilitate integration, various factors can affect whether providers have PDMP information integrated into their health IT systems. For example, providers may choose to not pursue integration, may have a health IT system that cannot support integration, or may not have a health IT system. In addition, how PDMPs are integrated into existing health IT systems, such as EHRs, can vary within a state, depending on factors such as each provider's choice of health IT systems and the capabilities of those systems. PDMP officials we interviewed also generally said their states

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<sup>28</sup>As noted previously, we interviewed PDMP officials from nine of our 10 selected states because officials from New York were unavailable at the time we conducted our interviews in March and April of 2020.

<sup>29</sup>PDMP information can be integrated into different types of health IT systems, such as state or regional health information exchanges (HIE) and provider health IT systems such as EHRs and pharmacy dispensing systems. HIEs provide the technology and facilities needed to support the electronic sharing of data among hospitals, physicians, clinical laboratories, radiology centers, pharmacies, health plans (insurers), and public health departments. See GAO report on HIEs, *Electronic Personal Health Information Exchange: Health Care Entities' Reported Disclosure Practices and Effects on Quality of Care*, [GAO-10-361](#) (Washington, D.C.: Feb. 17, 2010).

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were covering at least some of the costs related to state integration options for providers.

PDMP officials we interviewed in eight states indicated their efforts have resulted in increased integration among providers in their respective states. Officials in one other state said they were getting ready to roll out a statewide integration option for providers, which they subsequently told us became available in July 2020. However, none of the officials reported having achieved integration for all providers within their states, and they described various challenges they were addressing to increase or improve integration across the state. One challenge cited by PDMP officials was integrating smaller providers or those who lacked health IT systems or had older health IT systems with outdated technology. For example, a PDMP official from one state told us that over 20 percent of the physicians in the state lacked an EHR, and that the state was seeking other options for these physicians so that they could more easily incorporate PDMP information into their workflow.<sup>30</sup>

Federal agencies have also taken steps to encourage and facilitate PDMP integration. The Office of National Drug Control Policy's 2020 National Drug Control Strategy established an objective to increase the number of states that have some ability to integrate PDMPs into EHRs. Office of National Drug Control Policy officials said they are working with other federal agencies, including DOJ and HHS, to ensure federal efforts are focused on achieving this objective. In addition, a February 2020 HHS report unveiled a federal strategy to reduce health IT-related burdens on clinicians, including integrating PDMP information into health IT systems to help increase provider use of PDMPs. Specifically, this HHS report recommended that federal agencies work with states to improve PDMP integration through the adoption of common industry standards that are consistent with ONC and CMS policies, and by leveraging federal funding to facilitate integration of PDMP information into EHRs using existing standards.

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<sup>30</sup>The PDMP official from this state said the state was working with different entities, including the state's HIE, to examine options for providers who do not have an EHR or have an older EHR that cannot be integrated. The official explained that with the HIE option, a provider would log into the HIE and the HIE would be integrated with the PDMP. Alternatively, a provider could switch over completely to the HIE, using the HIE instead of the EHR as its health IT system.

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Examples of federal support that can encourage and facilitate integration include:

- **Funding.** DOJ and HHS component agencies have made grant and cooperative agreement funding available to states that can be used to, among other things, increase and improve the integration of PDMP information into providers' health IT systems. PDMP officials in one state said they have been using CDC funding to pay for a statewide license to integrate the state's PDMP into EHRs for all providers in the state so that providers do not have to pay for this licensing cost. In addition, the SUPPORT Act provides enhanced federal Medicaid funding for federal fiscal years 2019 and 2020 to states for certain expenses related to the design, development, and implementation of a qualified PDMP.<sup>31</sup> States must meet certain requirements to qualify for this funding, including facilitating the integration of information into providers' workflows. PDMP officials in one state said they were using this funding to support the development of various integration solutions for providers in their state.
- **Technical support.** DOJ and HHS component agencies also provide technical support to states to help with their integration efforts. For example, DOJ has developed and maintains the data-sharing hub, RxCheck, to provide states with another option for integrating PDMP information into health IT systems.<sup>32</sup> While RxCheck was initially developed to facilitate interstate sharing of PDMP information, it can now be used for integration as well by allowing PDMPs to share information with EHRs and health information exchanges (HIE). According to DOJ officials, as of June 2020, six states were facilitating PDMP integration for providers using RxCheck, and at least four additional states were in discussions with DOJ about using RxCheck for integration.<sup>33</sup>

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<sup>31</sup>A "qualified" PDMP is one that facilitates access by a covered provider to, at a minimum, specified information with respect to a covered individual, in as close to real-time as possible. It also facilitates the integration of information into the workflow of a covered provider, which may include the electronic system the covered provider uses to prescribe controlled substances.

<sup>32</sup>According to DOJ officials, RxCheck does not charge any connection or utilization fees to state PDMPs. However, DOJ officials said there may be costs that a state's PDMP vendor charges to connect to RxCheck.

<sup>33</sup>In addition to these states, DOJ officials noted there are several national providers pursuing integration through RxCheck.

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In addition, according to ONC officials, ONC provides technical and educational support to federal partners and states on health IT-related aspects of PDMPs, including supporting action plans or strategies for implementing PDMP and health IT integration.<sup>34</sup> For example, ONC officials have identified current challenges and successes related to PDMPs and health IT that are specific to integration in the clinical setting. Officials said a recent project has provided them a better understanding of the complexities of integrating PDMP information into health IT systems. This type of information may in turn help inform federal and state opportunities for advancing integration that can improve provider workflows in the clinical setting.

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**Physicians Identified Other Challenges such as Accessing PDMP Information from Other States, and State and Federal Officials Reported Efforts to Address these Challenges**

**Issues Related to Accessing PDMP Information from Other States**

Physicians in our selected states described various other challenges to most effectively using PDMPs when making patient care decisions, including (1) issues related to accessing PDMP information from other states, (2) some prescription information not being included in PDMPs, and (3) patient matching problems. State PDMP officials and federal agency officials described efforts they have undertaken to address these challenges.

Some physicians reported they could not access PDMP information from other states, or did not believe there was a way to do so based on their understanding of the PDMP. For example, at the time of our interviews, one of our selected states was not sharing information with other state PDMPs.<sup>35</sup> Physicians in three other states reported they were not aware of a way to search their PDMP for information from other states.

Among the physicians we interviewed who said they could access other states' PDMP information, some noted challenges in doing so. For example, eight physicians said they would like access to information from additional state PDMPs beyond what they can currently access. One physician described the need for information from non-neighboring states because patients lived part of the year in those states. Another challenge noted by five physicians is that searching other states' PDMP information through their PDMP website could be inconvenient or time-consuming, either because they had to manually select which states to search or

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<sup>34</sup>ONC is responsible for coordinating nationwide efforts to implement EHRs and other health IT systems.

<sup>35</sup>PDMP officials in this state subsequently told us that, as of July 2020, the state was able to share PDMP data with eight states, including three bordering states.

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because searching multiple states slowed the search process. For example, one physician said he could not remember the last time he checked another state's PDMP information because doing so requires additional steps, such as having to select which states to search. Three physicians also noted that while they were able to search other state information, they had not received any PDMP information from those states in their results.

Representatives from two pharmacy associations and two practicing pharmacists noted that searching other states' PDMP information can also be a challenge in the pharmacy setting. One pharmacist said his pharmacy had chosen not to check other states' PDMPs—even though it would be useful to do so—because it slowed the search process too much. In addition, searching other states' information could result in inconsistently formatted information or require multiple searches.

State PDMP officials described efforts they are undertaking to facilitate data-sharing with other states. Officials from eight state PDMPs reported sharing PDMP information with other states. Officials in one other state said they expected to have data-sharing in place soon, which they subsequently told us began in July 2020. PDMP officials also generally described ongoing efforts to improve interstate data sharing.<sup>36</sup> For example, PDMP officials in some states said they were working to make sure they were connected to both data-sharing hubs—PMP InterConnect and RxCheck—instead of just one, and PDMP officials in some states said they were working to enter data-sharing agreements with additional states. Officials also described ongoing efforts to resolve data-sharing challenges related to differing state access laws and restrictions. For example, states have different rules regarding who can access PDMP information, and state officials told us one challenge they had to work through was ensuring that the state receiving their information would follow access requirements that were consistent with their state's requirements. PDMP officials also noted that there were certain issues they could not control, particularly related to accessing PDMP information

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<sup>36</sup>According to our interviews with PDMP officials across our selected states, states varied in terms of what officials viewed as the optimal extent of data sharing for their state. For example, PDMP officials in one state said they wanted to share data with as many other states as possible because providers in their state treated a lot of patients from outside their state. In contrast, PDMP officials in another state determined that it was best to limit data sharing to states in their region because the benefits of sharing data with states outside their region were limited and did not outweigh the potential risks of sharing data.

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from other states' PDMPs. For example, PDMP officials said some other states do not allow or limit access to their state's PDMP data.

Federal agencies have also taken steps to encourage and facilitate the interstate data sharing of PDMP information. For example, the funding that HHS and DOJ agencies have provided to states for PDMPs—both grant and cooperative agreement funding and enhanced federal Medicaid funding—can be used to increase and improve the interstate data sharing of PDMP information. In addition, funding provided to states in some cases includes requirements related to interstate data sharing. To receive enhanced Medicaid funds in federal fiscal years 2019 and 2020 for the design, development, and implementation of a qualified PDMP, the SUPPORT Act requires states to have PDMP data-sharing agreements with all contiguous states. In addition, DOJ grant and CDC cooperative agreement funding requires states to maintain a connection to RxCheck. DOJ officials stated that requiring a connection to RxCheck helps to ensure states have options for connecting with other states.<sup>37</sup>

#### Some Prescription Information Not Included in PDMPs

Physicians told us that in some cases information on certain prescriptions for their patients was not included in their state's PDMP. They explained that such information is important to provide a complete history of any controlled substances a patient has been prescribed. They added that any missing prescriptions in a PDMP, such as for opioids, increases the risk for prescribing medications that may lead to overdoses or otherwise be unsafe for patients.

The following describes concerns we heard from physicians about missing prescription information in PDMPs, as well as steps federal agencies have taken to address these concerns:

- Most of the 31 physicians said they were concerned that medications dispensed or prescribed at certain federally-assisted substance use disorder treatment programs (such as methadone dispensed at opioid treatment programs) are often not included in PDMPs.<sup>38</sup> Representatives from one national pharmacy association and one practicing pharmacist similarly noted this concern. As previously described, federal law known as Part 2 prohibits federally-assisted substance use disorder treatment programs from disclosing patient

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<sup>37</sup>As previously noted, another similar hub, [PMP InterConnect](#), is also available to states.

<sup>38</sup>Some physicians we interviewed were not aware that this information is often not included in state PDMPs and learned of this during our interview.

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records that would identify a patient as having or having had substance use disorder without the patient's written consent. As a result, information on medications dispensed or prescribed at these facilities is often not included in PDMPs, according to some physicians and pharmacists we interviewed. In July 2020, SAMHSA issued a final rule modifying Part 2.<sup>39</sup> Among other changes, the final rule creates new permissions to allow opioid treatment programs to disclose dispensing and prescribing data, as required by applicable state law, to PDMPs, subject to patient consent.

- Five physicians in three states said prescriptions from Veterans Affairs (VA) facilities were not or were only sometimes submitted to their PDMP. PDMP officials in two other states noted that the VA is required to report information to state PDMPs and that this reporting has been an important step in ensuring that PDMPs contain complete information. Specifically, VA facilities are required to submit prescription information to their respective state PDMPs for individuals who are dispensed medication prescribed by a VA employee or a non-VA provider authorized by the VA to prescribe such medication.<sup>40</sup> According to VA officials, VA pharmacies are submitting information to the 49 statewide PDMPs and the District of Columbia and Puerto Rico PDMPs, and all pharmacies in those jurisdictions are submitting information.
- Two physicians in two states who treated patients who had also received care in Indian Health Service (IHS) facilities stated that their state's PDMP did not or did not always show prescriptions from IHS. In June 2016, IHS implemented a policy change requiring all federal IHS pharmacies to report opioid prescribing information to state PDMPs.<sup>41</sup> According to IHS officials, all IHS facilities now report information to their respective state PDMPs.<sup>42</sup> IHS has been in preliminary planning and design discussions to evaluate the feasibility

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<sup>39</sup>85 Fed. Reg. 42,986 (July 15, 2020). The final rule is effective August 14, 2020.

<sup>40</sup>38 U.S.C. § 5701(l); Veterans Health Administration Directive 1108.07, *Pharmacy General Requirements* (Washington, D.C.: March 10, 2017).

<sup>41</sup>See Indian Health Manual (Chapter 32), "State Prescription Drug Monitoring Programs." According to Chapter 32 of the Indian Health Manual, all federal IHS pharmacy sites with an approved MOU between the IHS Area and the State in which the facility is located shall ensure that Schedule CII-CV dispensing data is reported at the frequency required by the State in which the facility is located.

<sup>42</sup>According to IHS officials, IHS federal facilities currently report to state-based PDMPs in all states where IHS facilities are located. In May 2019, IHS released PDMP software to all IHS federal facilities that automatically reports controlled substance prescriptions to state-based PDMPs in near-real time.

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of PDMP interoperability into the IHS EHR, including discussions with other federal agencies, and has also advocated for PDMP standardization to facilitate information sharing, to the extent possible. PDMP officials in one of our selected states said they work closely with the IHS, mostly to help with data submission, data quality, and PDMP access for IHS providers. The PDMP officials said making sure IHS data are part of the PDMP is “absolutely essential” because patients often receive care from both IHS and non-IHS providers.

## Patient Matching Problems

Some physicians, pharmacists, and representatives from national pharmacy associations we interviewed described challenges matching PDMP records to the correct patient when searching the PDMP. Inaccurate patient matching can result in a PDMP search returning no records for a patient, returning records for the wrong patient, or returning multiple possible matches for a patient. These patient matching problems could happen due to clerical errors, patient name changes, patients having similar names and birthdates, or a patient using multiple names or having duplicate PDMP records, according to physicians and pharmacists. Such situations may result in a provider not having access to a patient’s full medication history. One physician noted that the patient matching issues he encounters with the PDMP are similar to the patient matching issues encountered with other health IT systems.<sup>43</sup>

PDMP officials in nine states stated that their PDMP used a vendor’s proprietary algorithm to conduct patient matching for their PDMP. These officials indicated the algorithms are designed to identify the correct patient records even if, for example, the name being searched does not match exactly what is in the patient’s records. According to DOJ officials and state PDMP officials, proprietary algorithms do not allow states to be aware of exactly how a vendor is conducting patient matching.<sup>44</sup> State PDMP officials stated that even with these algorithms, correct patient matching is an ongoing challenge. PDMP officials in two states also noted that increasing the number of states included in a PDMP search could

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<sup>43</sup>We have previously reported on challenges related to patient matching in health IT systems, such as inaccuracies and inconsistencies in demographic information, including when patients change their names or use multiple names. See *Health Information Technology: Approaches and Challenges to Electronically Matching Patients’ Records across Providers*, [GAO-19-197](#) (Washington, D.C.: Jan. 15, 2019).

<sup>44</sup>We previously reported that stakeholders expressed concern that it is not possible to assess the accuracy of algorithms used to conduct patient matching without independent testing to identify matches that the algorithm may have missed. HHS stated that the proprietary nature of many patient matching algorithms makes it difficult to assess their effectiveness. See [GAO-19-197](#).



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potentially increase the risk of patient matching errors, as broadening a search can increase the likelihood of encountering other people with similar names and demographic information. To help address patient matching issues, some PDMP officials we interviewed described how their PDMP staff manually reviewed such records in an attempt to resolve the issues.

ONC officials acknowledged that because PDMPs receive data from a number of different sources, varying data quality, standards, and technical implementations can lead to problems with patient matching. Officials stated that such patient matching problems can lead to unintended consequences such as incomplete medication histories in PDMPs, and negatively affect the ability to share PDMP data between states. ONC officials stated that while the agency does not have authority over the operation of PDMPs, its broader efforts could help address PDMP patient matching problems. For example, in 2017 ONC published the Patient Demographic Data Quality Framework, a tool to help providers and other organizations assess their processes for managing data quality and improve the quality of the demographic data they use in matching. In September 2019, ONC hosted a symposium on patient matching for PDMPs that brought together stakeholders, such as PDMP administrators and health IT developers, to discuss patient matching challenges faced by PDMPs. In addition, ONC officials described how they are obtaining private-sector input on technical solutions for patient matching and are working with health IT standards development organizations to better support patient matching. Officials said both of these efforts have the potential to improve patient matching for PDMPs, as well as for health IT systems overall.

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## Agency Comments

We provided a draft of this report to HHS, DOJ, and the Office of National Drug Control Policy for review and comment. HHS, DOJ, and the Office of National Drug Control Policy provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Health and Human Services, the Attorney General, the Director of the Office of National Drug Control Policy, and other interested parties. In addition, this report is available at no charge on the GAO website at <https://www.gao.gov>.

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If you or your staff have any questions about this report, please contact me at (202) 512-7114 or [hundrupa@gao.gov](mailto:hundrupa@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs can be found on the last page of this report. Major contributors to this report are listed in appendix II.

A handwritten signature in black ink that reads "Alyssa M. Hundrup". The signature is written in a cursive, flowing style.

Alyssa M. Hundrup  
Acting Director, Health Care

# Appendix I: Information for Selected States

**Table 2: Information for Selected States**

State	U.S. Census Bureau division	Opioid prescribing rate <sup>a</sup>	Opioid overdose death rate <sup>b</sup>	Type of agency that operates PDMP	PDMP received federal funding <sup>c</sup>	Prescribers required to check PDMP <sup>d</sup>	Number of other PDMPs users can query <sup>e</sup>
Arizona	Mountain	61.2	13.5	Pharmacy board	Yes	Yes	36
Indiana	East North Central	74.2	18.8	Professional licensing agency	No	Yes	25
Maine	New England	55.7	29.9	Substance abuse agency	Yes	Yes	31
Nebraska	West North Central	56.6	3.1	Department of Health	Yes	No	0
New York	Mid-Atlantic	37.8	16.1	Department of Health	Yes	Yes	26
Oklahoma	West South Central	88.1	10.2	Law enforcement agency	Yes	Yes	27
Oregon	Pacific	66.1	8.1	Department of Health	Yes	Yes	5
Tennessee	East South Central	94.4	19.3	Pharmacy board	No	Yes	22
Washington	Pacific	57.2	9.6	Department of Health	Yes	Yes	25
West Virginia	South Atlantic	81.3	49.6	Pharmacy board	Yes	Yes	27

Sources: U.S. Census Bureau documentation; Centers for Disease Control and Prevention (CDC) opioid prescribing rate data; Kaiser Family Foundation opioid overdose death rate data based on Kaiser Family Foundation analysis of CDC, National Center for Health Statistics. State profile information posted on the Prescription Drug Monitoring Program Training and Technical Assistance Center website in November, 2019. Information in the last four columns of this table are from these state profiles. | GAO-21-22

Note: To determine providers' views on the usefulness of prescription drug monitoring programs (PDMP) when making patient care decisions, we selected the 10 states in this table to review. We selected these states to reflect variation across the seven factors included in this table. This table reflects information available in 2019 and may not reflect current information.

<sup>a</sup>Rate of opioid prescriptions per 100 persons in 2017.

<sup>b</sup>Age-adjusted rate of opioid overdose deaths per 100,000 persons in 2017.

<sup>c</sup>Indicates whether the state received federal funding in 2019 for PDMP operations, support, or enhancements.

<sup>d</sup>Depending on state law, prescribers may be required to check the PDMP in certain circumstances.

<sup>e</sup>This column reflects the number of other PDMPs that authorized users can query.

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# Appendix II: GAO Contacts and Staff Acknowledgements

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## GAO Contact

Alyssa M. Hundrup at (202) 512-7114 or [hundrupa@gao.gov](mailto:hundrupa@gao.gov)

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## Staff Acknowledgements

In addition to the contact named above, Will Simerl (Assistant Director), Kala Amos, Sam Amrhein, Ann Halbert-Brooks, Barbara Hansen, Andrea E. Richardson (Analyst-in-Charge), Ethiene Salgado-Rodriguez, and Emily Wilson Schwark made key contributions to this report.

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