

# PDMP Annual Report 2022

**Prescription Drug  
Monitoring Program  
(PDMP)**

**November 2023**



**pennsylvania**  
DEPARTMENT OF HEALTH

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# Executive Summary

## **Background**

As required by the Achieving Better Care by Monitoring All Prescriptions Program (ABC-MAP) Act of Oct. 27, 2014, P.L. 2911, No. 191 (Act), the Pennsylvania Department of Health (DOH) conducted its annual review of the Prescription Drug Monitoring Program (PDMP) for calendar year 2022 (CY 2022).

## **Methods**

Using data from the PDMP system, the DOH investigated the PDMP's progress in achieving the goals of the Act by analyzing the number of legal and illegal queries, the number of queries performed by prescribers, the impact on controlled substance prescribing practices, the number of interstate data queries, and the number of electronic health record (EHR) and pharmacy management system queries from those integrated with the PDMP.

## **Results**

The number of logins continued to decrease throughout 2022 as more EHRs and pharmacies were integrated with the PDMP, since queries initiated via integrated systems do not require a login. The number of prescriber queries increased from 1.11 million in the fourth quarter of 2016 to 3.1 million in the fourth quarter of 2022 (184 percent increase). From the time the PDMP launched in the third quarter of 2016 to the end of 2022, opioid prescribing (all schedules, excluding buprenorphine) decreased by 47 percent, benzodiazepine prescribing declined by 35 percent, buprenorphine prescribing increased by 28 percent, the number of multiple provider episodes decreased by nearly 98 percent, and the number of patients receiving an average daily dose above 90 Morphine Milligram Equivalent (MME) decreased by 65 percent.

## **Conclusions**

In 2022, there continued to be favorable changes in the usage of the PDMP system and in controlled substance prescribing behaviors, including increases in the number of queries performed by prescribers, decreases in the number of dispensations for benzodiazepines and opioids, and decreases in risky prescribing metrics such as multiple provider episodes and the number of patients receiving high-dose opioids.

# Background

As required by the Achieving Better Care by Monitoring All Prescriptions Program (ABC-MAP) Act of Oct. 27, 2014, P.L. 2911, No. 191 (Act), the Pennsylvania Department of Health (DOH) conducted its annual review of the Prescription Drug Monitoring Program (PDMP) from Jan. 1, 2022 to Dec. 31, 2022. To help prevent prescription drug misuse and protect the health and safety of our community, Pennsylvania's PDMP collects information on all filled prescriptions for controlled substances. This information is available for PDMP users, which helps healthcare providers safely prescribe controlled substances, helps patients get the treatment they need, and reduces opioid overprescribing. In 2021 Pennsylvania had the ninth highest age-adjusted drug overdose death rate and the fourth highest number of drug overdose deaths in the country.<sup>1</sup>

## Methods

Data on controlled substance dispensations and PDMP logins and queries (i.e., searches) came from the PDMP system, which logs all user activity and maintains information on all dispensations of Schedule II–V controlled substances in Pennsylvania. PDMP users include healthcare providers, who can write prescriptions for patients, pharmacists, who can fill prescriptions for patients, as well as delegates, who can query the PDMP system on behalf of a healthcare provider or pharmacist with whom they work.

Controlled substances are drugs that have varying degrees of potential for misuse or dependence. Drugs and other substances that are considered controlled substances under the federal Controlled Substances Act (CSA) are divided into five schedules. Substances are placed in their respective schedules based on whether they have a currently accepted medical use in treatment in the United States, their relative misuse potential, and likelihood of causing dependence when misused. Federal statute defines controlled substances in the following schedules<sup>2</sup>:

- Schedule II drugs, substances, or chemicals are defined as drugs with a high potential for abuse, with use potentially leading to severe psychological or physical dependence. These drugs are also considered dangerous. Examples: morphine, oxycodone.
- Schedule III drugs, substances, or chemicals are defined as drugs with a moderate to low potential for physical and psychological dependence. Examples: aspirin/codeine combinations, anabolic steroids.
- Schedule IV drugs, substances, or chemicals are defined as drugs with a low potential for abuse and low risk of dependence. Examples: alprazolam, clonazepam, diazepam. Schedule V drugs, substances, or chemicals are defined as drugs with lower potential for abuse than Schedule IV and consist of preparations containing limited quantities of certain narcotics. Examples: Robitussin AC, Phenergan with codeine.

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<sup>1</sup> [https://www.cdc.gov/nchs/pressroom/sosmap/drug\\_poisoning\\_mortality/drug\\_poisoning.htm](https://www.cdc.gov/nchs/pressroom/sosmap/drug_poisoning_mortality/drug_poisoning.htm)

<sup>2</sup> <https://www.dea.gov/drug-information/drug-scheduling>

To assess change in controlled substance prescribing, drug dispensations were grouped into four categories based on their national drug code (NDC): benzodiazepines, buprenorphine, opioids and stimulants. Opioids and stimulants are further segmented based on their schedule designation, as assigned by the federal Drug Enforcement Agency (DEA). Dispensation counts for each drug category in a given calendar quarter are calculated and compared with dispensation counts from previous calendar quarters. Dispensation information is not collected from out-of-state pharmacies that are not licensed in Pennsylvania.

Multiple provider episodes are calculated by aggregating the number of unique individuals who received prescriptions from five or more prescribers and five or more dispensers for any Schedule II–V substance in a three-month period.

The count of patients receiving over 90 morphine milligram equivalents (MME) is calculated as the sum of the total MME on each day in the three-month time period based on all prescriptions an individual has filled, divided by the days' supply of the prescription(s). The MME for a particular drug is calculated using conversion factors provided by the Centers for Disease Control and Prevention (CDC).<sup>3</sup>

Information regarding illegal queries stems from individuals notifying the PDMP of alleged unauthorized use, which is then promptly investigated using PDMP user activity data.

## Results

### Utilization of the PDMP System

The PDMP began collecting data on all Schedule II–V controlled substance dispensations on June 24, 2016. Shortly thereafter, on Aug. 25, 2016, licensed prescribers and dispensers in Pennsylvania were able to access the system to query their patients. Requirements in effect from Jan. 1, 2022, through Dec. 31, 2022, include: 1) all licensed prescribers and dispensers in Pennsylvania are required to register with the PDMP; 2) prescribers have to query the PDMP each time a patient is prescribed an opioid drug product or benzodiazepine by the prescriber; 3) prescribers have to query the PDMP for each patient the first time the patient is prescribed a controlled substance by the prescriber for purposes of establishing a baseline and a thorough medical record or if a prescriber believes or has reason to believe, using sound clinical judgment, that a patient may be abusing or diverting drugs. Dispensers, such as pharmacists querying the PDMP before dispensing an opioid drug product or a benzodiazepine prescribed to a patient if any of the following apply: (a) the patient is a new patient of the dispenser; or (b) the patient pays cash when they have insurance; or (c) the patient requests a refill early; or (d) the patient is getting opioid drug products or benzodiazepines from more than one prescriber.

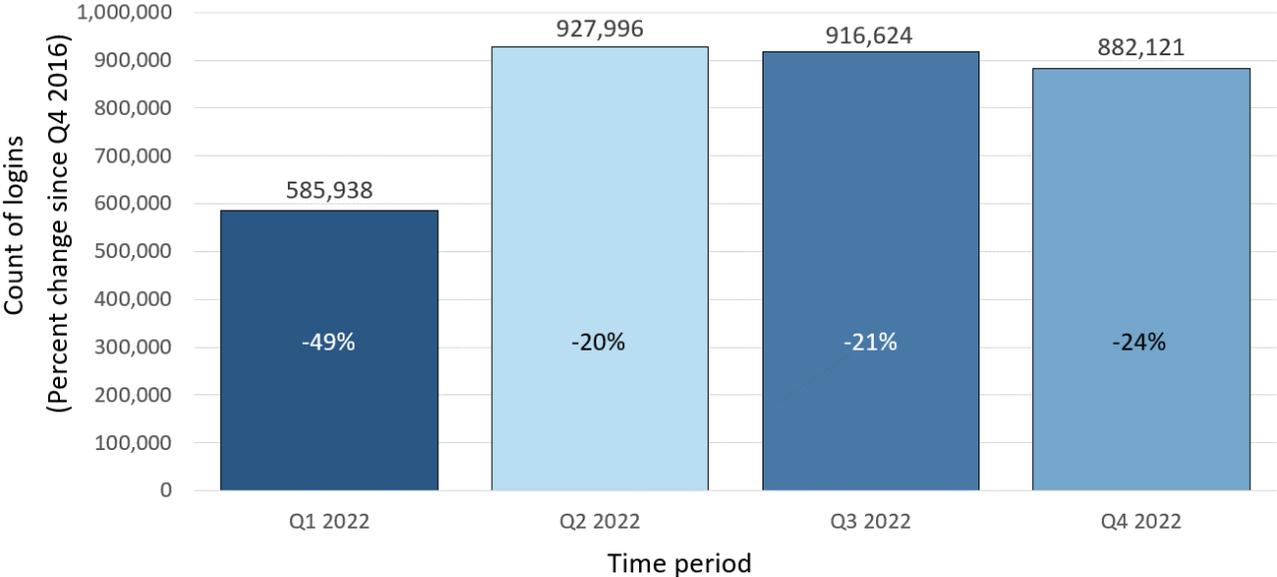
The trend in logins can be seen in Figure 1. The number of logins decreased from 1.15 million in the fourth quarter of 2016 to 882,121 in the fourth quarter of 2022 (24 percent decrease). However, the number of logins decreased throughout 2022 as more electronic health records (EHRs) and pharmacies were integrated with the PDMP. Since queries

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<sup>3</sup> <https://www.cdc.gov/opioids/data-resources/index.html>

initiated via integrated systems do not require a login to the PDMP website, this trend is expected. Please note that Q1 2022 counts are low due to a PDMP vendor transition and only include logins to the new system, which went live February 14, 2022. Since data for these counts are generated by the PDMP system vendor, the algorithms for calculating this information have likely changed. Comparison of trends across periods with different vendors is not recommended.

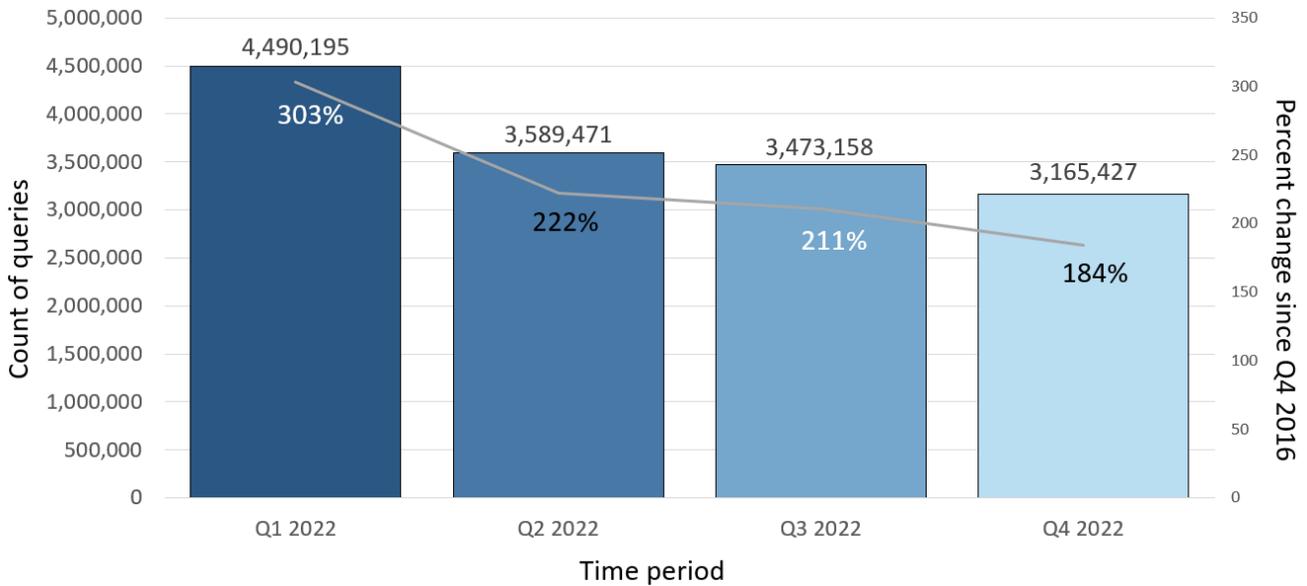
**Figure 1. Number of Times the PDMP Was Accessed, 2022**



Note: EHRs and pharmacies integrated with the PDMP do not require a website login and are not represented in the counts above. Count of logins represents logins from prescribers, dispensers, delegates and admins. Source: Pennsylvania Department of Health, PDMP System, 2023.

Despite the decrease in the number of logins, a marked increase in the number of prescriber queries was sustained throughout 2022, as seen in Figure 2, as compared to the fourth quarter of 2016. The number of prescriber queries increased from 1.11 million in the fourth quarter of 2016 to nearly 3.1 million in the fourth quarter of 2022 (184 percent increase).

**Figure 2. Number of PDMP Queries Performed by Prescribers and Their Delegates, 2022**

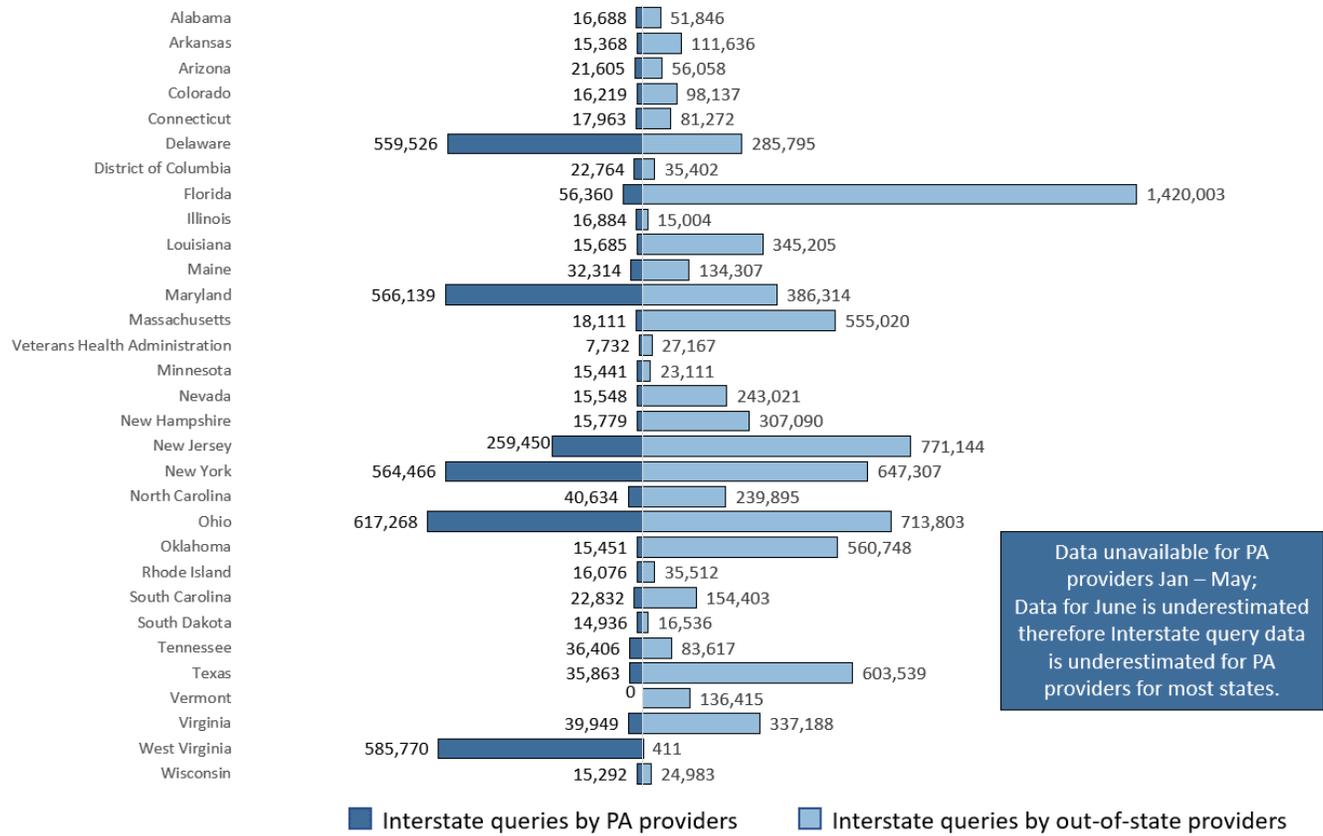


Note: Includes EHR queries from facilities integrated with the PDMP  
Source: Pennsylvania Department of Health, PDMP System, 2022.

### **Interstate Data Sharing**

There were no new PDMP data sharing agreements established in 2022. Interstate data sharing agreements have previously been established with 27 states and the District of Columbia between 2017-2021. Interstate data sharing allows users to query the PDMP for prescription data on patients who cross state lines to receive medical care or fill their prescriptions. By viewing other states' PDMP data, users can get a more complete picture of their patients' controlled substance history. Figure 3a and Figure 3b depict queries, both interstate queries by Pennsylvania providers and interstate queries of Pennsylvania's PDMP by out-of-state providers. The majority of interstate queries by Pennsylvania providers occurred with bordering states. A query does not indicate that a patient record was found and returned.

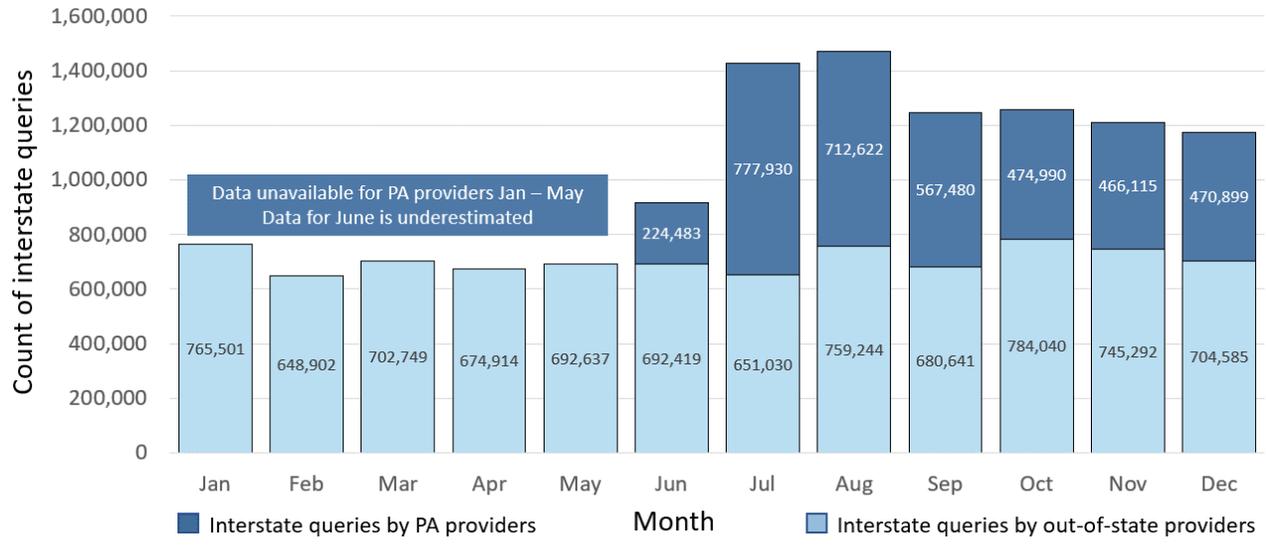
**Figure 3a. Number of Interstate Patient Requests, 2022**



Data unavailable for PA providers Jan – May; Data for June is underestimated therefore Interstate query data is underestimated for PA providers for most states.

Source: Pennsylvania Department of Health, PDMP System, 2023

**Figure 3b. Total Interstate Queries by Month, 2022**



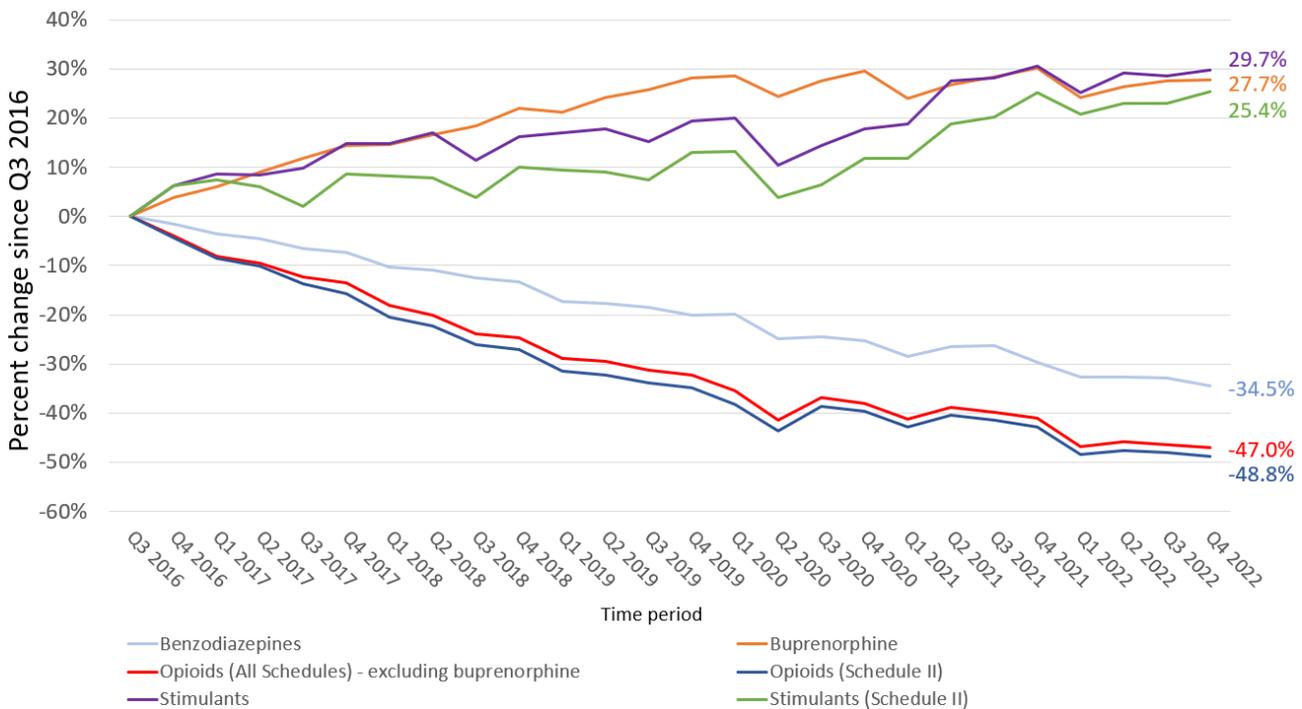
Source: Pennsylvania Department of Health, PDMP System, 2023

Note: The following states were connected prior to 2022: Arizona, Arkansas, Colorado, Connecticut, Delaware, Illinois, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, and the District of Columbia.

## Impact on Controlled Substance Prescribing

Prescribing behaviors have also changed since the launch of the PDMP. Figure 4 illustrates a decrease in opioid prescribing (all schedules, excluding buprenorphine) by 47 percent between the third quarter of 2016 and the end of 2022. In the same time period, benzodiazepine prescribing dropped by approximately 35 percent, stimulant prescribing increased nearly 30 percent, and buprenorphine, a drug commonly used to treat opioid dependence, increased by approximately 28 percent. See Appendix A for description of drug categories.

**Figure 4. Percent Change of Controlled Substance Prescribing Behavior, Q3 2016 – Q4 2022**

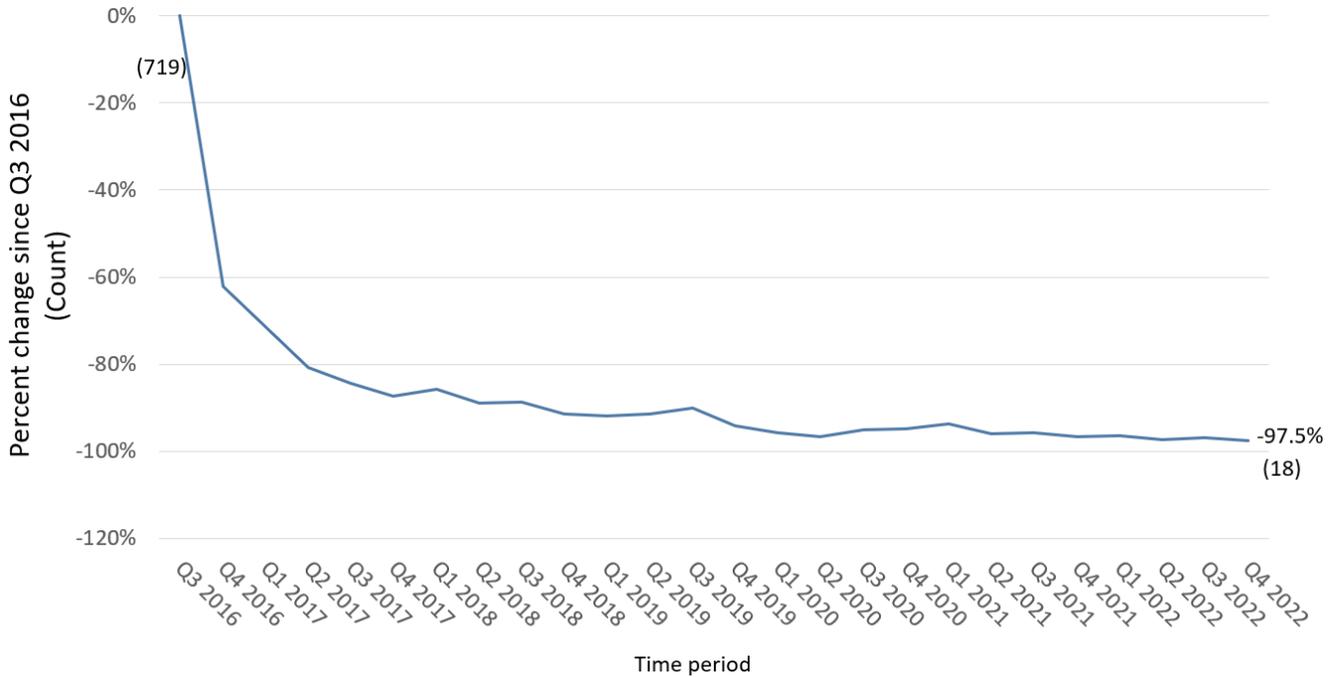


Source: Pennsylvania Department of Health, PDMP System, 2023

## Impact on Risky Prescribing

Use of the PDMP system has also had an impact on risky prescribing measures, including favorable impact on multiple provider episodes and average daily opioid dosage. Figure 5 displays the percent change in number of multiple provider episodes, which is the number of patients receiving and filling prescriptions from five or more prescribers and five or more pharmacies in a three-month period. From the launch of the PDMP in the third quarter of 2016 to the end of 2022, the Commonwealth experienced a nearly 98 percent decrease in multiple provider episodes.

**Figure 5. Percent Change of Multiple Provider Episodes, Q3 2016 – Q4 2022**

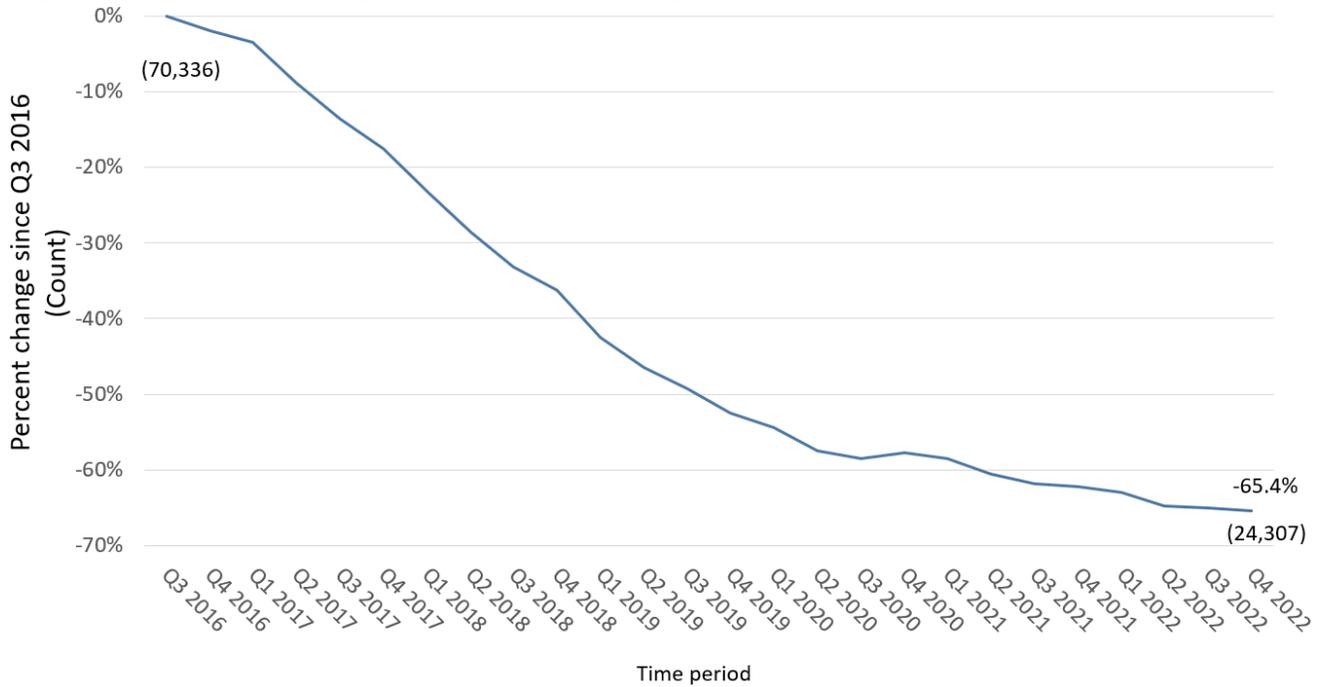


Note: Multiple provider episodes is defined as the number of individuals who received prescriptions from 5 or more prescribers and 5 or more dispensers for any Schedule II-V substance within a 3-month period.  
 Source: Pennsylvania Department of Health, PDMP System, 2023

One additional metric used to measure risky prescribing behavior is based on opioid dosage a patient receives per day, measured by Morphine Milligrams Equivalent (MME). The MME conversion factor is used to provide a standardized value to compare different strengths and types of opioids to each other and determine their combined effects, if applicable. According to the CDC, patients receiving more than 90 MMEs per day have a higher risk of opioid overdose.<sup>4</sup> Figure 6 demonstrates the percent change in the number of patients receiving an average daily dose greater than 90 MME. From the launch of the PDMP to the end of 2022, there was approximately a 65 percent decrease in the number of patients receiving an average daily dose above 90 MME.

<sup>4</sup> Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: <http://dx.doi.org/10.15585/mmwr.rr6501e1>

**Figure 6. Percent Change Patients Receiving Over 90 MME, Q3 2016 – Q4 2022**



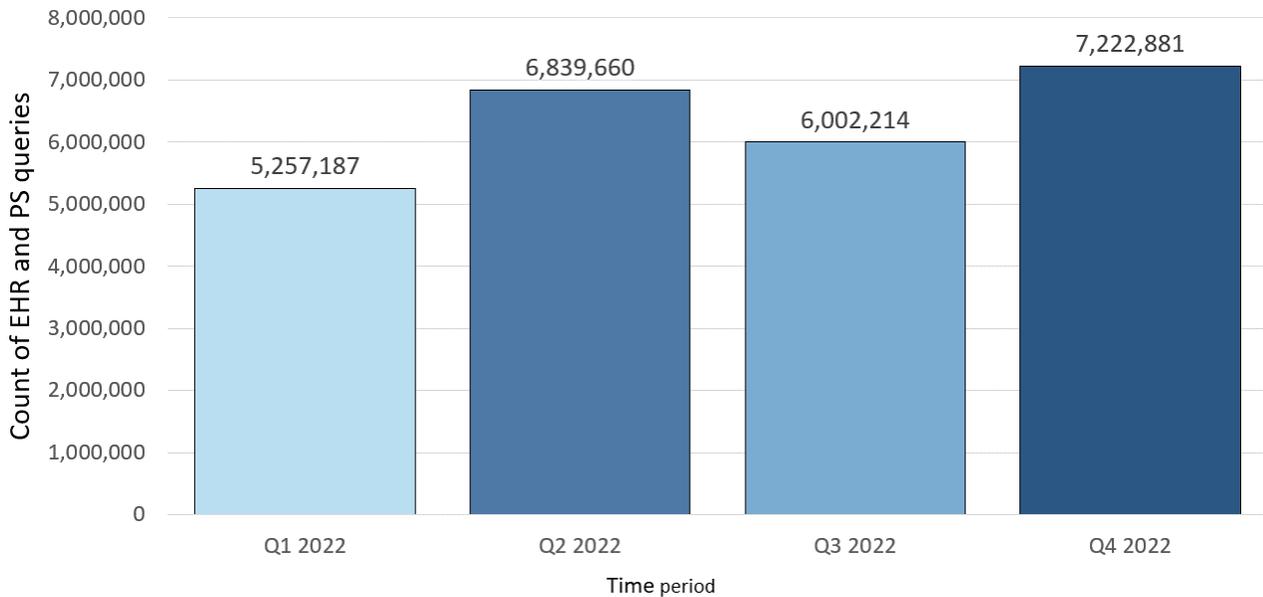
Note: MME is a standard way to calculate the strength of an opioid prescription. MME is calculated as (Quantity/Days' Supply)\*Strength per Unit\*Conversion Factor. Opioids are the only pharmaceutical class possible to convert to MME units. This measure is also referred to as Morphine Equivalent Doses (MED). Buprenorphine is excluded from MME calculations.

Source: Pennsylvania Department of Health, PDMP System, 2023

### **PDMP Integration**

In September 2017, the PDMP Office began an initiative to integrate the PDMP system into EHR and pharmacy management systems across the Commonwealth, though pharmacy integration did not begin until February 2018. The goal was to increase usage of the system by minimizing any workflow disruption and providing near-instant and seamless access to critical prescription history information to both prescribers and pharmacists. Through integration, prescribers and pharmacists can view their patients' controlled substance information without logging into the PDMP website and manually querying, thereby reducing the amount of time required to use the PDMP. Figure 7 shows the number of queries requested via EHR and pharmacy system integration in 2022.

**Figure 7. Number of Queries Requested via EHR and Pharmacy Integration, 2022**



Note: EHR system queries include those completed within EHR systems that are integrated with PDMP. Pharmacy queries include those completed within pharmacy management systems that are integrated with PDMP.

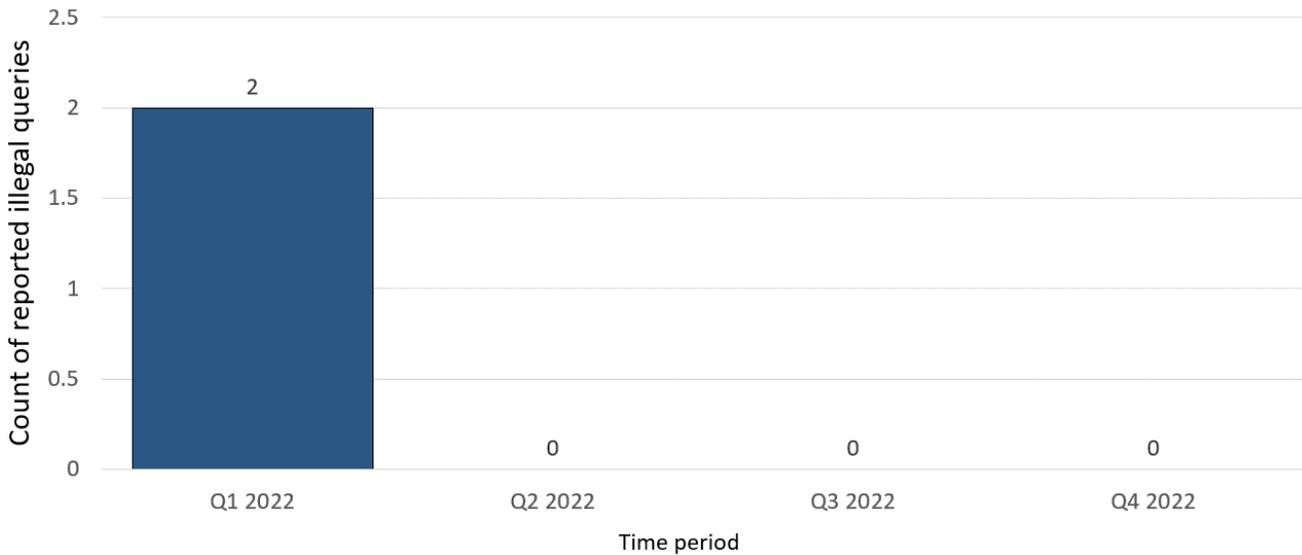
Source: Pennsylvania Department of Health, PDMP System, 2023

### **Illegal Queries**

According to the Act, any knowing, intentional, and negligent release or use of information from the PDMP system shall be subject to a civil penalty of not less than \$2,500 for each offense. The PDMP Office requires all users of the system to agree to the terms and conditions prior to using the system, which covers authorized access and confidentiality of PDMP data. When the PDMP Office learns of a potential illegal query, a case is promptly opened, investigated, and, when applicable, an order to show cause is issued to the alleged offender.

Figure 8 depicts the number of reported illegal queries that occurred in 2022. The number of queries represented in this chart does not reflect the number of individuals affected, as each query is counted as a separate violation, including in cases where a single individual's data was queried repeatedly.

**Figure 8. Count of Reported Illegal Queries in 2022**



Source: Pennsylvania Department of Health, PDMP System, 2023

### **Law Enforcement Access**

Pursuant to Act 191 35 P.S. § 872.9(b)(3), it is the responsibility of the Pennsylvania Office of Attorney General to query the system on behalf of all law enforcement agencies, including, but not limited to, the Office of Attorney General and federal, state and local law enforcement for Schedule II controlled substances in a manner determined by the Pennsylvania Office of Attorney General, and Schedule III–V controlled substances upon receipt of a court order. An annual report on law enforcement access of the PDMP and resulting activities is published separately by the Office of Attorney General.

## **Conclusions**

In 2022, there continued to be significant changes in controlled substance prescribing behaviors, including increases in the number of queries performed by prescribers, decreases in the number of dispensations for benzodiazepines and opioids, and decreases in risky prescribing metrics such as multiple provider episodes and the number of patients receiving high-dose opioids.

For additional information, please view the PDMP Interactive Data Report here:  
<https://www.health.pa.gov/topics/programs/PDMP/Pages/Data.aspx>

# Appendix A. Generic Drug Name by Class\*

## **Benzodiazepines**

ALPRAZOLAM  
CHLORDIAZEPOXIDE  
CLOBAZAM  
CLONAZEPAM  
CLORAZEPATE  
DIAZEPAM  
ESTAZOLAM  
FLURAZEPAM  
LORAZEPAM  
MIDAZOLAM  
OXAZEPAM  
QUAZEPAM  
TEMAZEPAM  
TRIAZOLAM

## **Buprenorphine**

BUPRENORPHINE

## **Opioids (All Schedules) – excluding buprenorphine**

ALFENTANIL  
BUTORPHANOL  
CODEINE  
DIHYDROCODEINE  
FENTANYL  
HYDROCODONE  
HYDROMORPHONE  
LEVORPHANOL  
MEPERIDINE  
METHADONE  
MORPHINE  
OPIUM/BELLADONNA ALKALOIDS  
OXYCODONE  
OXYMORPHONE  
PENTAZOCINE  
REMIFENTANIL  
SUFENTANIL  
TAPENTADOL  
TRAMADOL

## **Opioids (Schedule II)**

ALFENTANIL  
CODEINE  
FENTANYL  
HYDROCODONE  
HYDROMORPHONE  
LEVORPHANOL  
MEPERIDINE  
METHADONE  
MORPHINE  
OPIUM/BELLADONNA ALKALOIDS  
OXYCODONE  
OXYMORPHONE  
REMIFENTANIL  
SUFENTANIL  
TAPENTADOL

## **Stimulants (All Schedules)**

AMPHETAMINE/AMPHETAMINE SALTS  
ARMODAFINIL  
BENZPHETAMINE  
DEXMETHYLPHENIDATE  
DEXTROAMPHETAMINE  
DIETHYLPROPION  
LISDEXAMFETAMINE  
LORCASERIN  
METHAMPHETAMINE  
METHYLPHENIDATE  
MODAFINIL  
PHENDIMETRAZINE  
PHENTERMINE

## **Stimulants (Schedule II)**

AMPHETAMINE/AMPHETAMINE SALTS  
DEXMETHYLPHENIDATE  
DEXTROAMPHETAMINE  
LISDEXAMFETAMINE  
METHAMPHETAMINE  
METHYLPHENIDATE

\*The designated dispensation/prescription categories contain preparations of the specified substances, alone or in combination with other medications.