

PDMP Annual Report 2016-2017

**Prescription Drug
Monitoring Program
(PDMP)**

January 2020



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 first review of the Prescription Drug Monitoring Program (PDMP) from its inception on June 24, 2016 to Dec. 31, 2017.

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 system logins increased from 1.15 million in the fourth quarter of 2016 to 2.32 million in the first quarter of 2017 (101 percent increase) after the query mandate took effect in January 2017. Similarly, the number of prescriber queries increased from 1.11 million in the fourth quarter of 2016 to 2.23 million in the first quarter of 2017 (101 percent increase). From the time the PDMP launched in the third quarter of 2016 to the end of 2017, opioid prescribing (all schedules, excluding buprenorphine) decreased by approximately 15 percent, benzodiazepine prescribing declined by approximately 7.6 percent, buprenorphine prescribing increased by approximately 14.4 percent, the number of multiple provider episodes decreased by approximately 88 percent, and the number of patients receiving an average daily dose above 90 MME decreased by approximately 18 percent.

Conclusions

In the year immediately following the implementation of the Pennsylvania PDMP, there were 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.

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 first review of the Prescription Drug Monitoring Program (PDMP) from its inception on June 24, 2016 to Dec. 31, 2017. To help prevent prescription drug abuse and protect the health and safety of our community, Pennsylvania's Prescription Drug Monitoring Program (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 and helps patients get the treatment they need considering the recent opioid epidemic. In 2017, Pennsylvania had the third highest age-adjusted drug overdose death rate and the highest number of drug overdose deaths in the country.¹

Methods

Data on controlled substance dispensations and PDMP logins and queries (e.g. 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 abuse or dependence. Drugs and other substances that are considered controlled substances under the 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 abuse potential, and likelihood of causing dependence when abused. The following are examples of Schedule II through Schedule V controlled substances:

- Schedule II - drugs with acceptable medical use, but with a high abuse potential that lead to dependence (morphine, methadone, oxycodone).
- Schedule III - drugs with less abuse potential and a moderate risk of abuse potential (aspirin/codeine combinations, buprenorphine).
- Schedule IV - drugs with a lower abuse potential (alprazolam, clonazepam, diazepam).
- Schedule V - drugs with less abuse potential than other schedule drugs and contain limited quantities of a controlled substance (robatussin AC, phenergan with codeine).

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

¹ www.cdc.gov/drugoverdose/data/statedeaths/drug-overdose-death-2017.html

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).²

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

Results

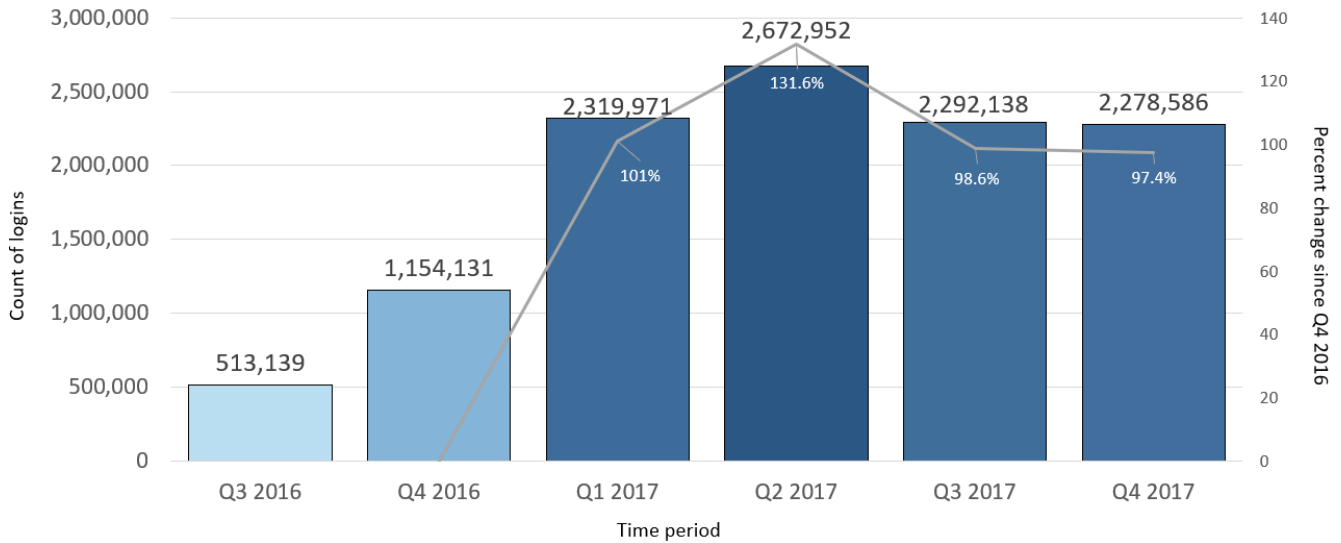
Utilization of the PDMP System

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. On Jan. 1, 2017, new requirements for prescribers and dispensers took effect. First, all prescribers and dispensers were required to register with the PDMP. Second, prescribers had to begin querying the PDMP each time a patient is prescribed an opioid drug product or benzodiazepine by the prescriber. This was in addition to an existing query mandate that required prescribers 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 maintaining 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. Third, dispensers, such as pharmacists, were required to begin querying the PDMP before dispensing an opioid drug product or a benzodiazepine prescribed to a patient if any of the following apply: (1) the patient is a new patient of the dispenser; or (2) the patient pays cash when they have insurance; or (3) the patient requests a refill early; or (4) the patient is getting opioid drug products or benzodiazepines from more than one prescriber.

The impact of the registration and query requirements can be seen in Figure 1. The number of logins increased from 1.15 million in the fourth quarter of 2016 to 2.32 million in the first quarter of 2017 (101 percent increase) after the new mandates took effect. The increase in number of logins was maintained over time, with 2.28 million logins in the fourth quarter of 2017 (97 percent increase compared to the fourth quarter of 2016). However, a peak was seen in Q2 2017 (2.67 million logins; 132 percent increase compared to Q4 2016), followed by a slight decline.

² www.cdc.gov/drugoverdose/resources/data.html

Figure 1. Number of Times the PDMP Was Accessed, Q3 2016 – Q4 2017

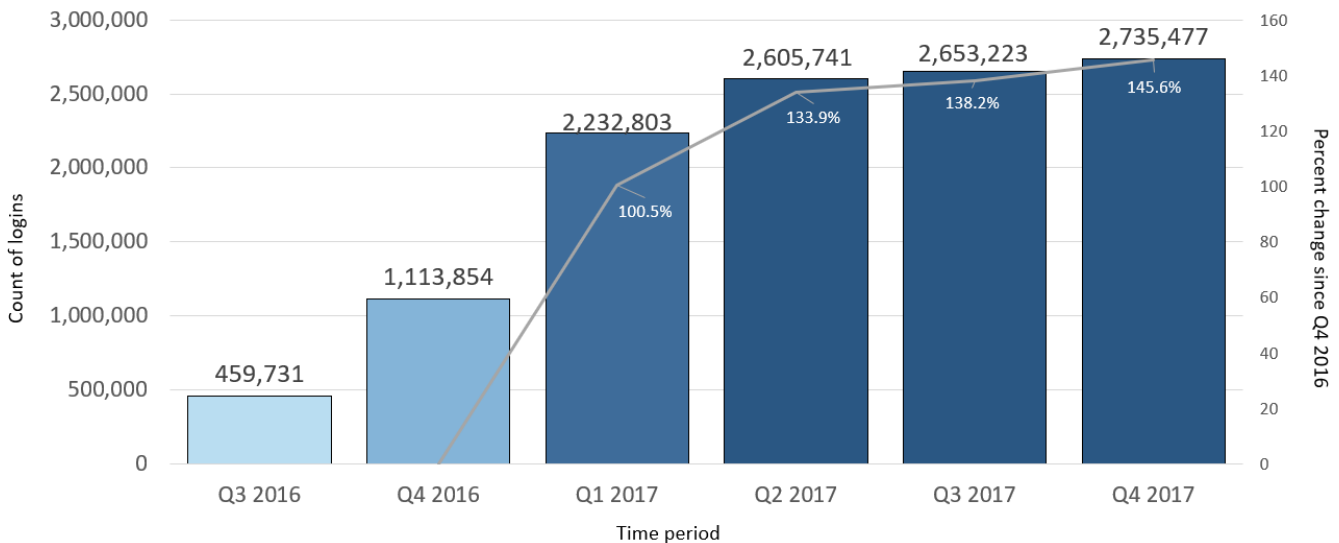


Note: Electronic Health Record (EHR) systems integrated with PDMP do not require logins and are not represented in the counts above. Count of logins represents logins from prescribers, dispensers, delegates and admins.

Source: Pennsylvania Department of Health, PDMP System, 2019

Similarly, a marked increase in the number of prescriber queries also occurred, as seen in Figure 2. The number of prescriber queries increased from 1.11 million in the fourth quarter of 2016 to 2.23 million in the first quarter of 2017 (101 percent increase) after the new mandate took effect and increased to over 2.73 million in the fourth quarter of 2017 (146 percent increase compared to the fourth quarter of 2016).

Figure 2. Number of PDMP Queries Performed by Prescribers and Their Delegates, Q3 2016 – Q4 2017

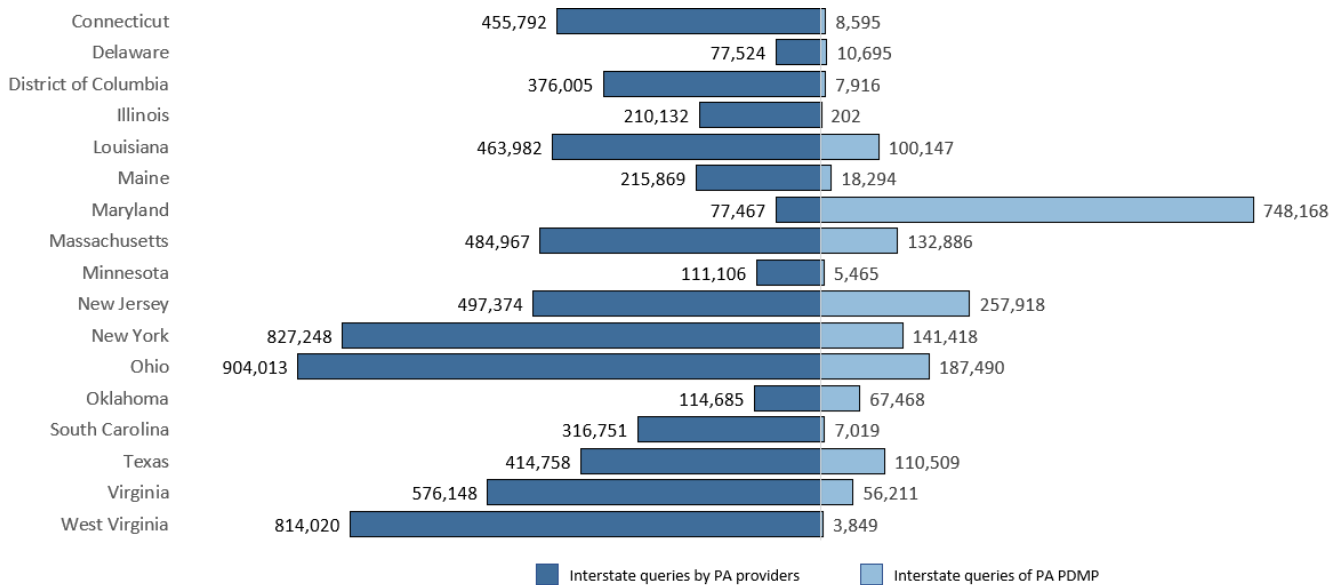


Source: Pennsylvania Department of Health, PDMP System, 2019

Interstate Data Sharing

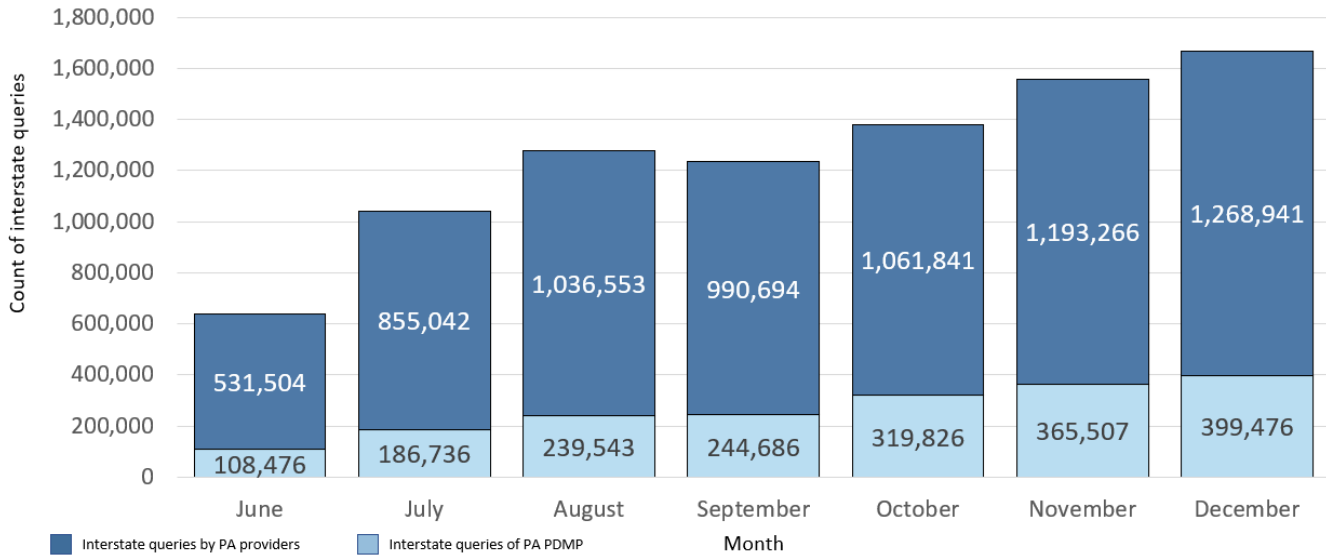
PDMP data sharing was established with 17 states between June and December of 2017. Interstate data sharing allows users to query the PDMP for prescription data on their patients who receive medical care and fill prescriptions in other states. By accessing other states' PDMP data, users can get a more 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. Figure 3c shows when interstate data sharing was established. The majority of interstate queries occurred with bordering states. A query does not indicate that a patient record was found and returned, only that a search was performed.

Figure 3a. Number of Interstate Queries by State, 2017



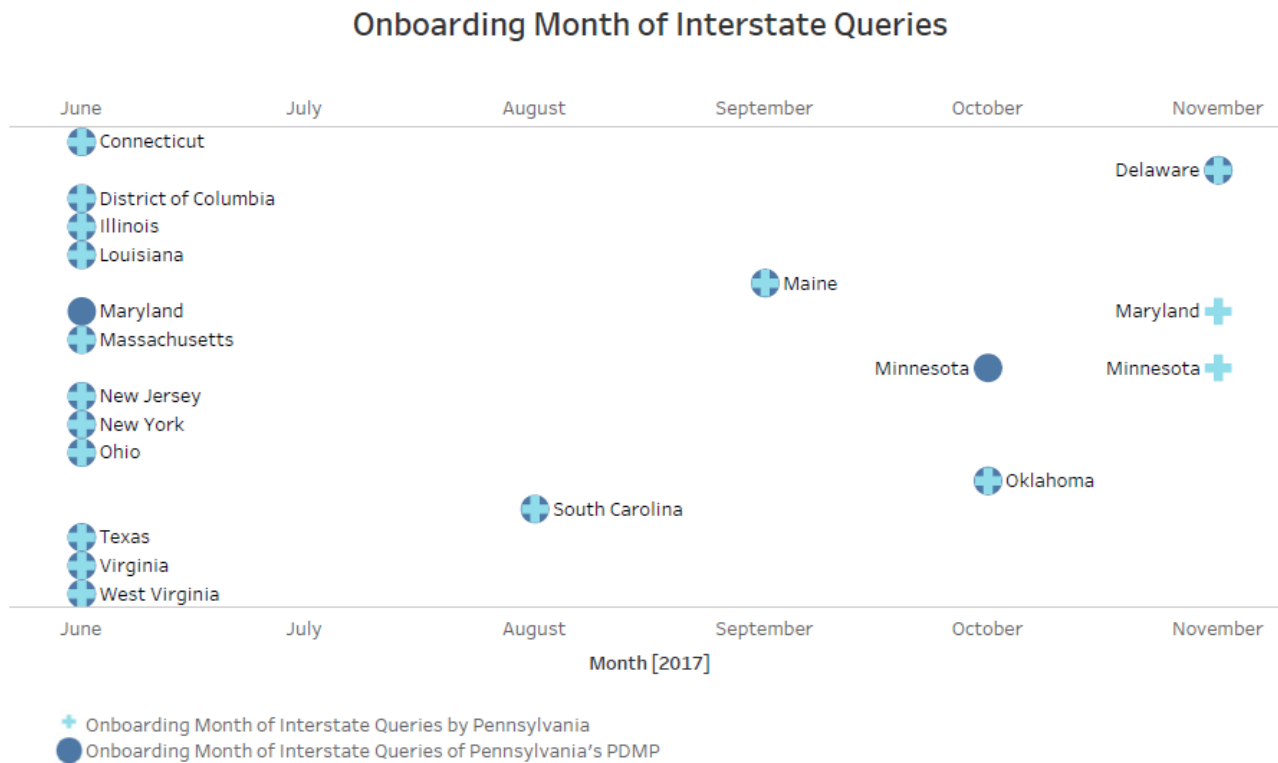
Source: Pennsylvania Department of Health, PDMP System, 2019

Figure 3b. Total Interstate Queries by Month, 2017



Source: Pennsylvania Department of Health, PDMP System, 2019

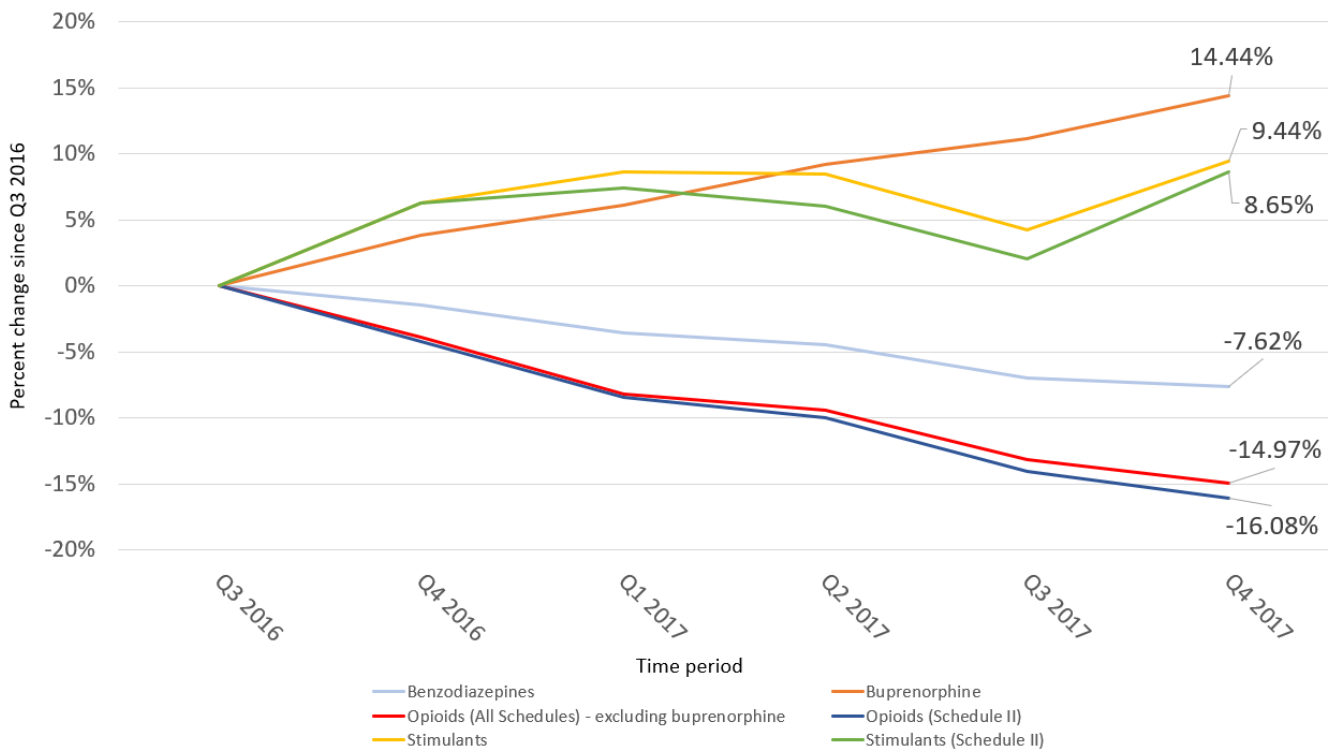
Figure 3c. Onboarding Month for Interstate Data Sharing, 2017



Impact on Controlled Substance Prescribing

Prescribing behaviors have also changed since the launch of the PDMP. Figure 4 illustrates a decrease in opioid dispensations (all schedules, excluding buprenorphine) by approximately 15 percent between the launch of the PDMP and the end of 2017. In the same time period, benzodiazepine prescribing dropped by approximately 7.6 percent, and buprenorphine, a drug commonly used to treat opioid dependence, increased by approximately 14.4 percent. See Appendix A for a description of drug categories.

Figure 4. Percent Change of Controlled Substance Prescribing Behavior, Q3 2016 – Q4 2017



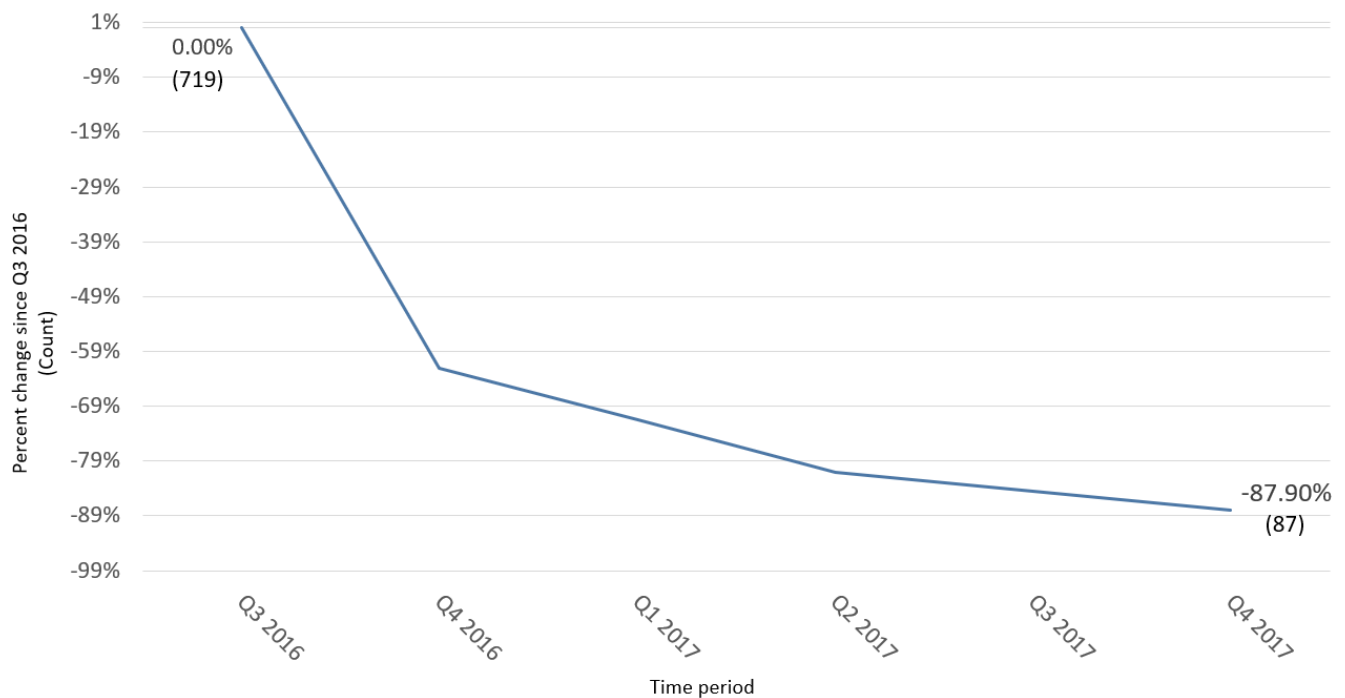
Source: Pennsylvania Department of Health, PDMP System, 2019

Impact on Risky Prescribing

The launch of the PDMP also had an impact on risky prescribing measures such as 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 2017, the commonwealth experienced an 88 percent decline in multiple provider episodes.

Figure 5. Percent Change of Multiple Provider Episodes, Q3 2016 – Q4 2017

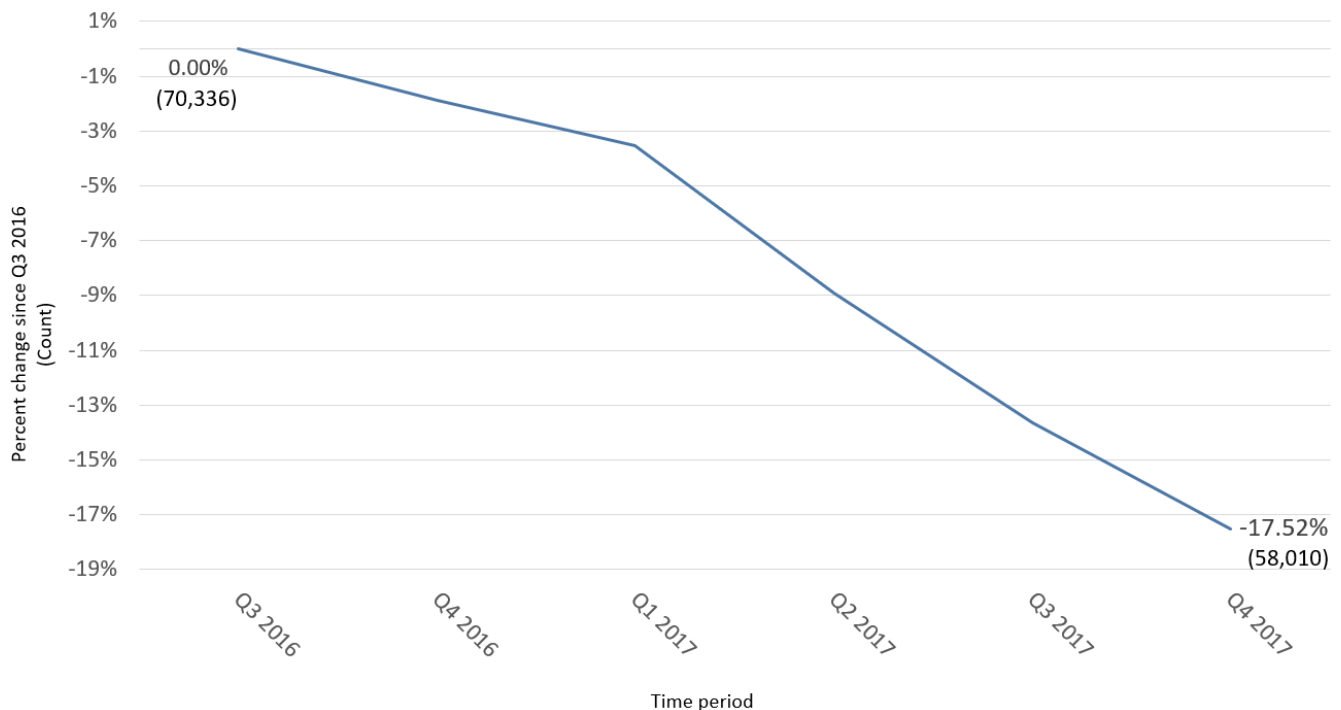


Note: Multiple provider episodes is defined as the number of individuals who received prescriptions from 5 or more prescribers and 5 or more dispensers for any Schedule II-V substance within a 3-month period.

Source: Pennsylvania Department of Health, PDMP System, 2019

One additional metric used to measure risky prescribing behavior is based on the opioid dosage a patient receives per day, measured by (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. The (CDC) recommends avoiding doses of greater than 90 as clinical evidence shows that higher opioid dosages are associated with increased risks for motor vehicle injury, opioid use disorder, and overdose.³ 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 2017, there was approximately an 18 percent decrease in the number of patients receiving an average daily dose above 90 MME.

Figure 6. Percent Change Patients Receiving Over 90 MME, Q3 2016 – Q4 2017



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, 2019

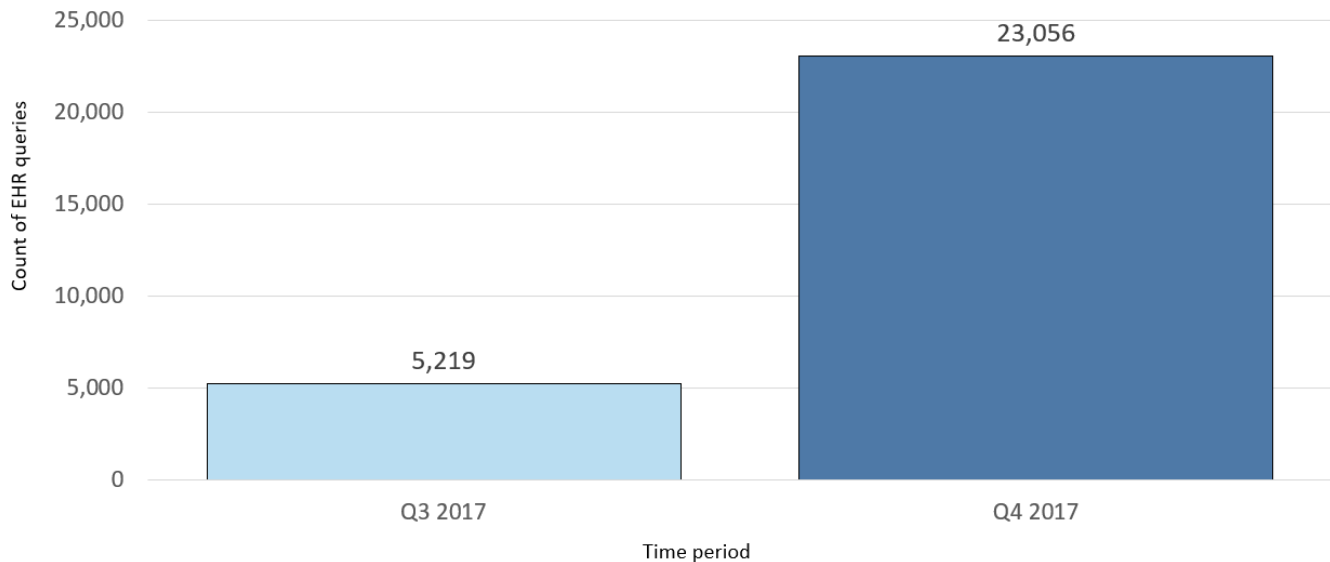
PDMP Integration

In September 2017, the PDMP began an initiative to integrate the PDMP system into electronic health records (EHR) and pharmacy management systems across the commonwealth. 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

³ 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>

pharmacists can view their patients' controlled substance information without logging into the PDMP website and manually querying, thereby significantly reducing the amount of time required to use the PDMP. Figure 7 shows the number of queries requested via EHR integration in 2017, resulting from initial integrations with one health system and one physician group practice. Since the first pharmacy integration did not occur until February 2018, pharmacy queries are not represented in this figure.

Figure 7. Number of Queries Requested via EHR Integration, Q3 – Q4 2017



Note: EHR system queries include those completed within EHR systems that are integrated with PDMP. EHR-PDMP integration efforts began in August 2017.

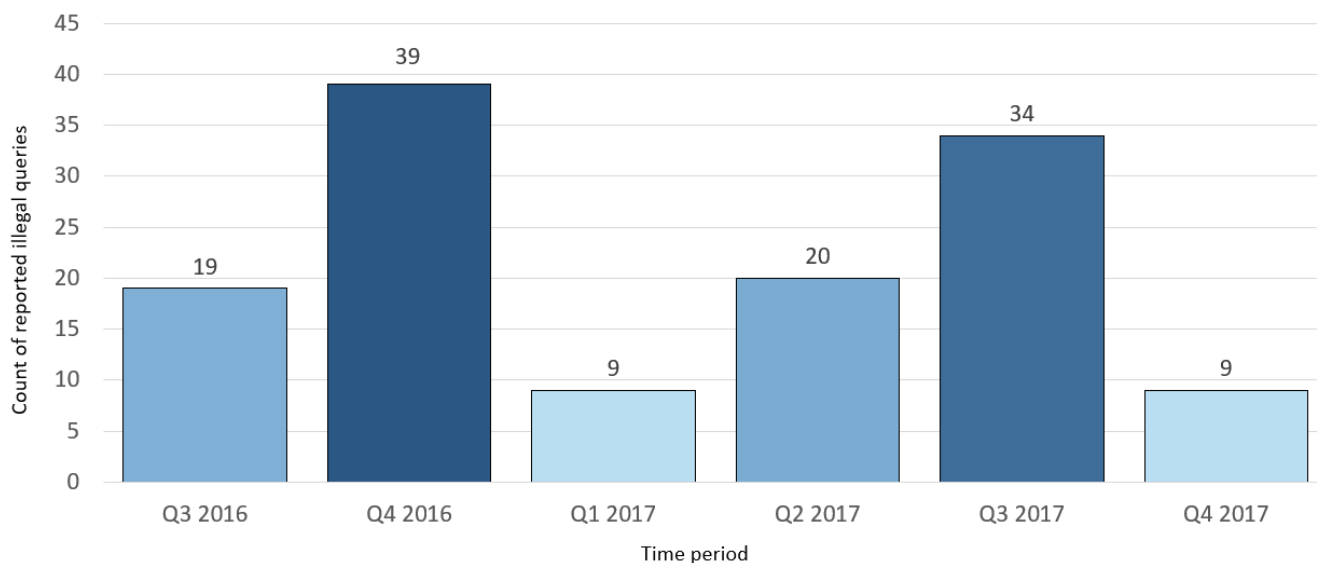
Source: Pennsylvania Department of Health, PDMP System, 2019

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 2016 and 2017. 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, Q3 2016 – Q4 2017



Source: Pennsylvania Department of Health, PDMP System, 2019

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 the year immediately following the implementation of the Pennsylvania PDMP, there were 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 visit www.doh.pa.gov/pdmp and click on “Interactive Data Report.”

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
BENZPHETAMINE
DEXMETHYLPHENIDATE
DEXTROAMPHETAMINE
DIETHYLPROPION
LISDEXAMFETAMINE
METHAMPHETAMINE
METHYLPHENIDATE
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.