PDMP Data by Prescriber Category Interactive Data Report: Technical Notes

Data Sources

Data for this report is from the Pennsylvania Dispensation Drug Monitoring Program (PDMP), which collects all Schedule II-V controlled substance dispensations data in Pennsylvania. The current PDMP system started collecting dispensations in July 2016. Data is updated annually. Prescriber category is derived from a combined PDMP dataset that merges controlled substance data and provider Classification from the National Plan and Provider Enumeration System (NPPES) Downloadable File from the Centers for Medicare & Medicaid Services[1]. Limitations for using this file from CMS for this Prescriber Specialty Dashboard include prescriber specialty is self-reported and is not verified or validated by CMS. Prescriber Classifications among "Physician" prescriber types that dispensed medications accounting for less than 0.5% of all controlled substance dispensations in calendar year (CY) 2021 (N=17,718,665), were excluded from consideration for "Prescriber Category" in this report. Some of the Classification categories prescribing <0.5% of all controlled substance dispensations include radiologists, dermatologists, and podiatrists, among others. Prescriber Classifications among "Physician Assistant" and "Nurse Practitioner" prescriber types that dispensed medications accounting for less than 0.5% of all controlled substance dispensations prescribed by all Physician Assistants and all Nursing Classifications in CY 2021, were also excluded from consideration for "Prescriber Category" in this report.

Students in an organized health care education/training program Classification categories, despite accounting for more than 0.5% of all controlled substance dispensations in CY 2021, were also excluded from this dashboard as their specialty information highly varies from prescriber to prescriber, depending on care setting and occupation description. Accurate determination of these prescriber's specialties consistent with their daily operations is difficult to ascertain as they change specializations regularly during their training periods. Data for these prescriber Classifications is available upon submittance of a formal data request, available via ra-dh-pdmp@pa.gov.

Certain nursing-related specialties such as Clinical Nurse Specialists (CNSs) and Registered Nurses (RNs) were excluded as they do not have prescriptive authority over controlled substances in Pennsylvania. As there are controlled-substance prescriptions present for these specialties in the PDMP, we assume these prescribers are nurse practitioners (NPs), in practice, as NPs are authorized to prescribe controlled substances in Pennsylvania. In such cases, we also assume these prescribers did not update their NPPES record to reflect their current classification and specialization. Thus, we consider these records unreliable, and therefore, cannot report on their prescribing metrics. Prescriptions from CNSs and RNs also account for less than 0.5% of controlled substance prescribing by any nurse classification.

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[1] https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/NationalProvIdentStand/DataDissemination

If a prescriber switched Classifications during an individual calendar year, the Classification that a prescriber ascribed to for most of the CY of interest was applied to all dispensations written by that prescriber in that year. To ensure consistency between individual metrics shown on the dashboard, the prescriber's new specialty would then be applied to all dispensations the following year. While this is a potential limitation for aggregating data at the annual level, prescribers very rarely switched Classification. For example, out of the 50,282 prescribers in CY 2021 for Classification categories included in this report, only 2 (<0.01%) switched Classification.

Prescribers who dispensed medications to Pennsylvania residents in CY 2021 with practice locations outside of Pennsylvania were included in the report, but only contributed to 3% of total controlled substance dispensations in the report (N=17,718,665). Prescribers with a Pennsylvania practice location made up the vast majority of controlled substance dispensations in the report (N= 16,156,144, 91%).

Drug classes included on the dashboard from the PDMP data include opioids, benzodiazepines, stimulants, and buprenorphine (please see Appendix A for details). All metrics shown in the dashboard only pertain to these drug classes, and are derived from Schedule II- V controlled substance dispensations. All metrics shown on the dashboard, regardless of the drug class of interest, were derived using dispensations only for patients residing in the Commonwealth of Pennsylvania at the time the dispensation was filled. Specifications for how each metric in the prescriber specialty dashboard are calculated are as follows:

Data Updates

Data is updated annually.

Measures

Number of dispensations: the sum of the annual number of records from 2017 to 2021, grouped by year, drug class and prescriber Classification.

Proportion of controlled substance dispensations: the sum of the annual number of records for each drug class from 2017-2021, divided by the total number of controlled substance dispensations, grouped by year and prescriber category.

Average days' supply: the sum of the total days' supply divided by the total number of dispensations for each drug class, from 2017-2021, grouped by year and prescriber category.

Average daily MME: for opioid dispensations only, the sum of average daily MME divided by the total number of dispensations from 2017-2021, grouped by year and prescriber category.

Total number of prescribers: the sum of the annual number of prescribers writing prescriptions that were subsequently filled by patients from each drug class from 2017-2021, grouped by year and prescriber category. Counts between 1 and 5 are suppressed.

Total number of patients: the sum of the number of unique patients that received dispensations per each drug class from 2017-2021, grouped by year and prescriber category.

Average number of dispensations per prescriber: The sum of the total number of records for each drug class, divided by the total number of prescribers writing prescriptions that were subsequently filled by patients from each drug class, grouped by year and each individual prescriber category.

Average number of patients per prescriber: The sum of the number of unique patients that filled prescriptions for each drug class, divided by the number of prescribers writing prescriptions that were subsequently filled by patients from each drug class, grouped by year and each individual prescriber category.

Metrics on each dashboard page are organized into three subheadings: Dispensation Measures, Prescriber Measures and Patient Measures. Dispensation measures provide information on controlled substances dispensed to Pennsylvania residents. Prescriber measures provide information on the prevalence of prescribers in each prescriber category, both in general and relative to Pennsylvania residents. Patient measures provide information on the prevalence of patients in each prescriber category, both in general and relative to the number of prescribers in each prescriber category.

Consistency with Other Reports
Differences with other published reports may occur due to differing case definitions or time lags. The PDMP system relies on pharmacies to report accurate and timely information. Pharmacies can correct or submit post-dated data at any time. Therefore, PDMP data changes as pharmacies correct, amend, or resubmit data. The current report represents a snapshot in time as of October 2022. The Classification from the National Plan and Provider Enumeration System (NPPES) Downloadable File relies on prescribers to report accurate and timely information and to update their information as needed.

Disclaimer
The Office of Drug Surveillance and Misuse Prevention is continuously working to improve the quality and timeliness of the data. The Interactive Data Report represents the most up-to-date PDMP data available for analysis as of October 2022 and is subject to change. Some measures are based on data extracts from a real-time data collection system, which is subject to continuous updating. The current version includes corrections related to missing/invalid zip codes using sources outside of the PDMP system.

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Appendix A. Generic Drug Name by Class*

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

Buprenorphine
BUPRENORPHINE
BUPRENORPHINE + NALOXONE

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

Stimulants (All Schedules)
AMPHETAMINE/AMPHETAMINE SALTS
ARMODAFINIL
BENZPHETAMINE
DEXMETHYLPHENIDATE
DEXTROAMPHETAMINE
DIETHYLPROPION
LISDEXAMFETAMINE
LORCASERIN
METHAMPHETAMINE
METHYLPHENIDATE
MODAFINIL
PHENDIMETRAZINE
PHENTERMINE

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