



Brief Article

Prescription drug monitoring program utilization among 15 US opioid treatment programs

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1. Opioid misuse

Of over 50,000 overdose deaths in the United States in 2015, 33,091 involved opioids (CDC, 2016), and the number of first time users of psychotherapeutic drugs (opioids, sedatives, tranquilizers, and stimulants) is currently on par with the number of first time marijuana users (SAMHSA, 2016). Opioid misuse takes an incalculable emotional toll on families and communities, and is estimated to currently cost employers in excess of \$10 billion yearly (ASAM, 2017). Over 75% of those currently entering treatment for heroin addiction and 80% of all heroin users report using prescription opioids prior to using heroin (Jones, 2013), an inversion of the picture in the 1960s, when 80% of those seeking treatment for opioid addiction started with heroin (Cicero, Ellis, Surratt, & Kurtz, 2014). While a full examination of the factors that have contributed to this shift is beyond the scope of this brief communication, extraordinary increases in opioid prescribing and dispensations over the past two decades have catalyzed public health authorities, criminal justice professionals, treatment advocates and researchers to find ways to surveil opioid prescribing, diversion, and misuse. One state-level intervention that has proven useful is the prescription drug monitoring program (PDMP).

2. Role of PDMPs

PDMPs provide both supply and demand data to those in the opioid treatment and criminal justice communities: 1) By providing education, such as provision of information and feedback to prescribers, pharmacists and the public, inter- and intrastate prescribing patterns can be examined and analyzed, providing needed information about comparative usage among many geographic regions, specialties, and drug classes. 2) PDMPs serve public health initiatives, such as addressing under- and overutilization, the initiation of education and prevention programs, formulation of laws and regulations, development of controlled substances policies and establishment of practice and treatment guidelines. 3) Access to PDMP data can spur early intervention and prevention efforts, such as providing regulatory authorities information that

can be analyzed to detect patterns that suggest doctor shopping, the presence of forged prescriptions, or other means of diversion. 4) PDMPs provide criminal justice professionals a centralized location (i.e. a central database) for investigating complaints. 5) PDMPs improve patient care by helping opioid treatment program (OTP) personnel and other addiction medicine professionals identify patients with i) a need for mental health or addiction services or, ii) those receiving unsafe doses or drug combinations. By sharing PDMP information with patients, including openly discussing potential addiction or safety concerns, clinicians can work collaboratively with patients to ensure proper usage of scheduled medication. In all cases, PDMPs protect confidentiality by explicitly, in most cases statutorily, restricting access to PDMP data, safeguarding the privacy of patients, prescribers, and pharmacies.

3. Methodology

In order to assess the ways in which OTPs access and utilize PDMPs, we undertook a mixed-methods study to collect and report: 1) Identified baseline and quarterly PDMP data and, 2) Staff and administrative interventions with patients who provided information that was not concordant with PDMP data. Responses were collected from a 15-program convenience sample (30 programs were invited to participate) of OTPs across 11 states in the US (MI, LA, UT, AL, GA, ME, CT, MA, FL, NY, and MD) selected by the American Association for the Treatment of Opioid Dependence (AATOD). The invitation to participate was extended to programs that the AATOD President (Mark Parrino) believed had the resources and staffing to commit to the task of compiling and submitting data. Programs in Vermont, New Hampshire, California, and Illinois were originally included but declined to participate before the study commenced due to concerns about demands on staff. Although we did not collect any data on non-participating programs we did compare population density and other characteristics (race, ethnicity, marital status) of the counties where participating and non-participating OTPs were located. Population demographics were retrieved from towncharts.com (US demographic rankings, 2017); population density characteristics were determined by the Beale urbanicity code for the zip code reported by the program (Economic Research Service, U.S.D.o.A., 2013).

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At baseline, 15 OTP directors (or their designee) provided information on their census and PDMP usage for patients admitted to their programs up to Dec. 31, 2014. On the first day of each quarter in 2015, the Principal Investigator (HM) provided an online survey link to the OTP Director. Directors submitted quarterly PDMP usage data over the course of 2015. Directors were asked to report 1) Number of new intakes each quarter, 2) How many of those new intakes were checked against their state's PDMP, 3) How many were found to have unreported prescriptions and, 4) Which unreported prescriptions were found. Among patients identified with undisclosed prescriptions, we asked directors how many of these patients 1) Received additional counseling, 2) Signed an agreement to allow the OTP to communicate with the prescribing practitioner and, 3) Were discharged as a result of unreported prescriptions detected from the PDMP database. The online survey also included an open-ended question that asked directors to describe interventions that their OTP initiated with patients found to have misreported prescription histories. Programs received \$750 to help defray any costs associated with their participation. Two programs did not continue to participate past the first quarter of 2015; one concluded that the additional demands on personnel would be too great; the other lost its program director and curtailed all non-clinical functions.

4. Results

All programs that declined to participate were located in urban areas. In contrast, 50% of participating programs were located in urban areas, 50% suburban/rural. Population characteristics, therefore, varied somewhat between participating programs and non-participating. Comparison in population characteristics in counties where participating and non-participating programs were located showed that in counties where participating OTPs were located, residents were more likely to be white (66% v. 48%), married (43% v. 36%), and non-Hispanic (10% v. 24%). The two non-completing programs' baseline data did not differ significantly from those that continued to participate. Thirteen (87%) of the 15 OTPs provided complete information. The summaries below are based on the 13 OTPs that provided complete data.

Table 1 includes baseline and quarterly aggregate findings (N, percentage, median, and interquartile range (IQR)) for the 13 OTPs that provided complete data.

Baseline: On 12/31/14, total census for all 13 OTPs was 6202. Across these programs, the census ranged from 87 to 2233 (median 295 patients; IQR 234, 515). Close to three-quarters (69%) of OTP patients were checked against their respective OTP state's PDMP database with one OTP not checking any of their patients and five checking all of their patients against the PDMP database (median 107; IQR 63, 278). Among patients whose PDMP record was checked, 9% did not report a

prescription and ranged from 2 to 49% across the 13 OTPs. Of those with unreported prescriptions, 56% were for opioids and 38% for benzodiazepines. A small percentage of unreported opioids were for methadone – likely as a pain medication – and for buprenorphine (11%). In both instances these medications were likely prescribed by an office based physician since federal confidentiality laws and regulations prohibit OTPs from sending patient health information to PDMPs. Nearly all patients (98%) with discrepant PDMP reports (PDMP yes; self-report no) were given extra counseling; 20% of those who were found to be using prescribed medications that they had not reported to the OTP were ultimately discharged.

Summary report of all new intakes in 2015: Participating programs had a total of 3422 intakes in 2015, an average of 263 per program. 2907 (85%) were checked through the state's PDMP. Among patients checked, 341 (12%) were found to have unreported prescriptions. Almost one-quarter (23%; N = 79) of all new intakes with discrepant reports were discharged in 2015 as a result of OTP checks with state PDMPs. At baseline, 5 of 13 programs that participated throughout the year checked 100% of their patients against their state's PDMP; overall, 69% of total census had been checked. From baseline through the 4th quarter, percent of patients checked for drugs prescribed in the PDMP database ranged from 69% to 93% across the 13 OTPs. While about half the programs (six) reported insignificant changes in numbers of patients checked over the course of the 1-year study (especially true for programs that were checking 100% at baseline), the remaining programs (with the exception of one) significantly increased PDMP checks during 2015. Two programs went from checking virtually none (0% and 7%) of their patients at baseline to, respectively, 87% and 100% by the fourth quarter. Overall, rates of unreported prescriptions among OTP enrollees were not significantly different from those already in treatment when the study commenced. On a quarterly basis, unreported prescriptions were relatively stable, and the composite numbers at the end of the year are not significantly different from those at baseline, (although, as noted, programs that conducted little or no PDMP checks in 2014 reported accessing the databases more frequently in 2015).

4.1. Interventions used by OTPs to address patient underreporting

Across all four quarters, programs used a variety of methods to address concerns with patients who were detected on the PDMP database to have been prescribed medication, though they had reported that they hadn't. We asked administrators to provide specific examples of interventions that were used with patients found to be underreporting. Examples include:

Table 1
PDMP patient data for all 13 OTPs.

| Variable | Baseline | | | Q1.2015 | | | Q2.2015 | | | Q3.2015 | | | Q4.2015 | | |
|--------------------------------------|----------|------|----------------|---------|------|--------------|---------|------|--------------|---------|------|--------------|---------|------|--------------|
| | N | (%) | Median (IQR) | N | (%) | Median (IQR) | N | (%) | Median (IQR) | N | (%) | Median (IQR) | N | (%) | Median (IQR) |
| Census, intakes | 6202 | 100% | 295 (234, 515) | 822 | 100% | 52 (31, 63) | 860 | 100% | 43 (32, 62) | 824 | 100% | 56 (26, 73) | 916 | 100% | 45 (24, 60) |
| PDMP-checked ^a | 4304 | 69% | 107 (63, 278) | 697 | 85% | 33 (26, 52) | 680 | 79% | 35 (13, 48) | 682 | 83% | 34 (26, 63) | 848 | 93% | 28 (19, 58) |
| Rx unreported ^b | 387 | 9% | 7 (5, 38) | 65 | 9% | 2 (1, 8) | 91 | 13% | 4 (1, 8) | 66 | 10% | 4 (0, 7) | 119 | 14% | 8 (3, 10) |
| Methadone unreported ^c | 51 | 13% | 2 (0, 5) | 8 | 12% | 0 (0, 1) | 13 | 14% | 0 (0, 1) | 14 | 21% | 0 (0, 1) | 9 | 8% | 0 (0, 1) |
| BPN unreported ^c | 43 | 11% | 1 (0, 1) | 13 | 20% | 0 (0, 1) | 15 | 16% | 1 (0, 2) | 4 | 6% | 0 (0, 0) | 16 | 13% | 0 (0, 2) |
| Other opioid unreported ^c | 218 | 56% | 3 (2, 9) | 34 | 52% | 2 (0, 6) | 41 | 45% | 2 (1, 4) | 44 | 67% | 3 (1, 5) | 68 | 57% | 5 (2, 8) |
| BZN unreported ^c | 145 | 38% | 2 (1, 13) | 34 | 52% | 2 (0, 4) | 29 | 32% | 1 (0, 3) | 29 | 44% | 2 (1, 4) | 49 | 41% | 2 (0, 5) |
| Stimulants unreported ^c | 26 | 7% | 0 (0, 4) | 10 | 15% | 2 (0, 2) | 16 | 18% | 0 (0, 1) | 17 | 26% | 1 (0, 2) | 24 | 20% | 1 (0, 2) |
| Other Rx unreported ^c | 9 | 2% | 0 (0, 0) | 4 | 6% | 0 (0, 0) | 5 | 5% | 0 (0, 1) | 4 | 6% | 0 (0, 0) | 2 | 2% | 0 (0, 0) |
| Added counseling ^c | 378 | 98% | 7 (2, 38) | 63 | 97% | 2 (1, 8) | 82 | 90% | 2 (1, 8) | 65 | 98% | 4 (0, 7) | 117 | 98% | 8 (1, 10) |
| Discharged ^c | 77 | 20% | 0 (0, 2) | 9 | 14% | 0 (0, 1) | 9 | 10% | 0 (0, 1) | 23 | 35% | 0 (0, 2) | 38 | 32% | 0 (0, 2) |

Abbreviations: PDMP - prescription data monitoring program; Rx - a prescribed controlled medication; OTP - opioid treatment program; BPN - buprenorphine; BZN - benzodiazepines; IQR - inter-quartile range (25%–75%).

^a Base N (denominator for %) is N for "Census, intakes".

^b Base N (denominator for %) is N for "PDMP-Checked".

^c Base N (denominator for %) is N for "Rx unreported".

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