

Brief Research Report

Evaluation of Florida Physicians' Knowledge and Attitudes Toward Accessing the State Prescription Drug Monitoring Program as a Prescribing Tool

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Abstract

Objective. The purpose of this study is to assess Florida physicians' attitudes and knowledge toward accessing the state's prescription drug monitoring program (PDMP).

Design. Five thousand medical doctors and osteopathic physicians licensed in Florida were randomly selected for a voluntary and anonymous 15-question self-administered survey approved by the Institutional Review Board. Surveys were distributed through U.S. postal service mail. Likert-scale questions were used to assess prior knowledge (1 = none to 5 = excellent) and attitudes toward accessing the PDMP (1 = strongly disagree to 5 = strongly agree).

Results. The study yielded a response rate of 7.8%, 71.5% of whom agreed or strongly agreed that the PDMP is a useful tool. Among participants that have access and answered the PDMP usefulness question, 94.8% agree or strongly agree that it is a useful tool. There were 63 out of 64 physicians (98.4%) who conducted 25 or more searches who agreed or strongly agreed that the PDMP is a useful tool for monitoring patients' controlled substance histories. There were 72.5% of participants with access that answered the "doctor shopping" question who agreed that "doctor shopping" will decrease. Among the 64 most frequent PDMP users, 69.4% agreed or strongly agreed that they have prescribed fewer controlled substances after accessing the PDMP.

Conclusions. The study revealed that a majority of participants believe that the PDMP is a useful tool for monitoring patients' controlled substance histories. More continuing education programs should be provided to Florida physicians to enhance their knowledge regarding PDMPs.

Key Words. Controlled Substances; Electronic-Florida Online Reporting Controlled Substance Evaluation; Physicians; Prescription Drug Monitoring Programs

Introduction

As of November 1, 2013, 49 states and two U.S. Territories have enacted legislation establishing a prescription drug monitoring program (PDMP) [1]. The Obama Administration issued the 2013 Prescription Drug Abuse Prevention Plan, and one of the four major focuses is tracking and monitoring controlled substances through PDMPs [2]. According to the Centers for Disease Control and Prevention, approximately 15,000 individuals die annually from prescription overdoses involving opioid analgesics [3]. Approximately 48,000 women died of opioid overdoses between 1999 and 2010 [4]. Prescription drug abuse in

Florida has historically been a major public health threat, as six individuals die every day from overdoses as of September 2013 [5]. In 2009, there were more pain clinics than McDonald's restaurants in Broward County, Florida [6]. The growth of "pill mills" or facilities conducting unlawful prescribing and dispensing of controlled substances outside the standards of medical practice, is an important driving force in the prescription drug abuse epidemic [6]. Weak regulations and poor oversight of pain clinics, limited oversight of physician dispensing, and Florida's failure to react soon to implement stricter laws were crucial factors involved in the epidemic [6]. According to the 2012 Florida Medical Examiner's Report, deaths caused by oxycodone decreased by 41.1% [5]. However, deaths caused by heroin increased by 89.5% compared with 2011 [5]. The reduction in oxycodone deaths may be the result of the PDMP and stricter pain clinic laws and regulations [7]. Florida's PDMP is known as the Electronic-Florida Online Reporting Controlled Substance Evaluation, which is an electronic database that collects and stores controlled substance dispensing information for schedules II-IV [8]. Pharmacies began submitting controlled substance data effective September 1, 2011 [8]. All controlled substance data must be submitted to the Florida Department of Health within 7 days of dispensing [8]. House Bill 7095 established that physicians are prohibited from dispensing schedules II and III medications [9]. Therefore, data submission mostly applies to pharmacies. Florida's PDMP became operational September 1, 2011, meaning that health care practitioners could begin accessing patient advisory reports (PAR); however, they are not required by law to do so [9]. The PAR is a summary of patients' controlled substance histories as specified by the health care practitioner's query [9]. Physicians can request access to Florida's PDMP by completing a request form with their name, date of birth, last four digits of their social security number, state license number and license type, DEA number, and contact information [10]. As of October 31, 2013, 11% of licensed medical doctors and 24.3% of osteopathic licensed physicians are registered to access the PDMP [11]. Of those individuals registered, 69.7% of medical doctors and 77.7% of osteopathic physicians have made requests through the PDMP [11].

The purpose of this study was to evaluate Florida physicians' attitudes and knowledge toward accessing the state's PDMP.

Methods

Five thousand medical doctors and osteopathic physicians licensed in Florida as "active" status and a license status description as clear (licensed physician is clear to practice in Florida) with Florida addresses were randomly selected from more than 58,413 medical doctors (MDs) and 5,810 osteopathic physicians (DOs) listed in the Florida Licensee Data Center within the Department of Health. This study was approved by the Institutional Review Board of Nova Southeastern University. MDs and DOs herein identified as "physicians" were randomized together to identify a sample representative of the

true population. Physicians' mailing addresses, names, and licensure information were utilized strictly for study purposes and were not linked back to any participants. No financial or other incentives were provided to the study respondents. The study was a voluntary and anonymous 15-question self-administered survey accompanied by a cover letter with a description of Florida's PDMP and information regarding physician access to the database. The investigators downloaded the physician information from the Licensee Data Center into a Microsoft Excel spreadsheet. Surveys were distributed through U.S. postal service mail, and the study was conducted from January 2013 to June 2013. All participants received a reminder postcard through the U.S. mail approximately 1 week after receipt of the survey. Participants were provided with a postage-paid envelope to increase the response rate. The survey included demographic questions regarding practice status, such as the number of years licensed as a physician and primary area of practice. Likert-scale questions were used to assess prior knowledge (from 1 = none to 5 = excellent) and attitudes toward accessing the PDMP (from 1 = strongly disagree to 5 = strongly agree). Study participants were questioned regarding PDMP access including rationale for applying/not applying to the program. The last question enabled study participants to provide comments and discuss issues not mentioned in the survey. Data were analyzed using SPSS software (Statistics for Windows, Version 21.0, IBM Corporation, Armonk, NY, USA), and both descriptive and inferential statistics were included in the results.

Results

A total of 388 surveys were completed, and 37 were returned as undeliverable. The calculated response rate was 7.8% for all surveys mailed.

The PDMP's Utility for Monitoring Patients' Controlled Substance Histories

A total of 256 out of 358 participants or 71.5% agreed or strongly agreed that the PDMP is a useful tool. Among the 89 individuals who answered the question with neither agree nor disagree, four participants had access to the PDMP. The additional 85 had not applied for access. There were 63 of 64 physicians (98.4%) who conducted 25 or more searches who agreed or strongly agreed that the PDMP is a useful tool for monitoring patients' controlled substance histories. Among participants that had access and answered the PDMP usefulness questionnaire, 128/135 physicians (94.8%) agreed or strongly agreed that it is a useful tool (Table 1). Additionally, individuals without access who answered the usefulness question (122/215 physicians, 56.7%) indicated that the PDMP was a useful tool. Additionally, of the 110 physicians who have not applied for access and listed their level of PDMP knowledge as none, 2.7% (3/110 responding to the usefulness question) responded that they disagreed or strongly disagreed that the PDMP is a useful

Table 1 Participant distribution for PDMP usefulness and doctor shopping

	Have Access	In Progress	Do Not Have Access
Useful (agree or strongly agree)	128 out of 135	5 out of 7	122 out of 215
Doctor shopping decreases (agree or strongly agree)	98 out of 135	3 out of 7	116 out of 215

PDMP = prescription drug monitoring program.

tool. There were 43.6% of the 110 physicians who agreed or strongly agreed that the PDMP is a useful tool.

Among the 254 individuals answering the years licensed and practice question that agreed or strongly agreed that the PDMP is useful, their mean was 23.6 years of practice. Among the 12 participants answering the years licensed and practice question that disagreed or strongly disagreed that the PDMP was useful, they averaged 28.3 years of practice.

Those who practice longer tended to find the PDMP less useful.

PDMP Utility by Specialty

Physician specialists that agreed or strongly agreed the PDMP was a useful tool were Emergency Medicine (95%), Ophthalmology (85.7%), Orthopedics (85.7%), Internal Medicine (84.6%), Psychiatry (84%), Neurology (83.3%), Obstetrician/Gynecologist (OB/GYN) (81.3%), and Family Practice (76.3%). Specialties with the least individuals responding agreed or strongly agreed were Dermatology (20%), Infectious Disease (0%), and Urology (0%) (Table 2).

Doctor Shopping

Among participants without access and that responded to the “doctor shopping” question, 53.9% of them agreed or strongly agreed that “doctor shopping” will decrease. Additionally, 72.5% (98/135) who had access and answered the “doctor shopping” question agreed that “doctor shopping” will decrease (Table 1). Approximately 9.2% (33/358) of participants feel that the PDMP will not decrease “doctor shopping.”

Doctor Shopping Attitudes by Specialty

The specialties with the most participants that agreed or strongly agreed that the PDMP would decrease “doctor shopping” were Ophthalmology (85.7%), Pain Management (81.8%), Psychiatry (79%), Infectious Disease (75%), Physiatrist (75%), and Emergency Medicine (70%). Also, the areas of practice with the least individuals responding agreed or strongly agreed were Pediatrics (46.9%), Dermatology (20%), and Urology (0%) (Table 3).

Controlled Substance Prescribing Practices

Approximately 3.7% of participants disagreed or strongly disagreed with the statement that their con-

trolled substance prescribing practices are being monitored more closely since Florida’s PDMP was implemented. There were 82 physicians who responded that they agreed or strongly agreed that they have prescribed fewer controlled substances after accessing the PDMP, and among these 82.9% (68/82) also agreed or strongly agreed that they believe their controlled substance prescribing practices are being monitored more closely since Florida’s PDMP was implemented. The question regarding prescribing fewer controlled substances was analyzed. A total of 74 physicians disagreed or strongly disagreed that they have prescribed fewer controlled substances, and 56.7% (47/74) of these participants agreed or strongly agreed that their controlled substance prescribing practices are being monitored more closely. Among the 64 most frequent PDMP users (accessed at least 25 patients), 69.4% (43/62) that responded to the question agreed or strongly agreed that they have prescribed fewer controlled substances after accessing the PDMP. A total of 64 individuals responded that they have completed more than 25 searches in the PDMP. Only 62 answered the question regarding prescribing fewer controlled substances.

Table 2 PDMP is a useful tool by specialty (agree or strongly agree)

Specialty	Percentage
Anesthesiology	60
Cardiology	57.1
Dermatology	20
Emergency medicine	95
Family practice	76.3
Infectious disease	0
Internal medicine	84.6
Neurology	83.3
OB/GYN	81.3
Ophthalmology	85.7
Orthopedics	85.7
Pain management	81.8
Pediatrics	56.3
Physiatrist	62.5
Plastic surgeon	66.7
Psychiatry	84
Urology	0

PDMP = prescription drug monitoring program.

Table 3 “Doctor shopping” will decrease by specialty (agree or strongly agree)

Specialty	Percentage
Anesthesiology	50
Cardiology	57.1
Dermatology	20
Emergency medicine	70
Family practice	57.6
Infectious disease	75
Internal medicine	66
Neurology	66.7
OB/GYN	50
Ophthalmology	85.7
Orthopedics	57.1
Pain management	81.8
Pediatrics	46.9
Physiatrist	75
Plastic surgeon	66.7
Psychiatry	79
Urology	0

Impact on Pain Management

Out of the nine physicians that listed pain management as their primary practice area and responded to the statement that “the PDMP has had a negative impact on pain management in my practice,” 12.5% (1/8) agreed or strongly agreed with the statement.

Knowledge and by Specialty

Among the 89 individuals that neither agreed nor disagreed with the statement that the PDMP is a useful tool for monitoring patients’ controlled substance histories, nine participants felt that their knowledge was good or very good. Also, lack of knowledge was the most common response for why the participants do not seek access to the PDMP. The specialties with the most physicians who rated their knowledge as good, very good, or excellent were Emergency Medicine (82.5%) and Pain Management (81.8%). The areas of practice with 0% of individuals rating their knowledge as good, very good, or excellent were Infectious Disease and Orthopedics (Table 4).

Access and by Specialty

Among the 89 individuals that neither agreed nor disagreed that the PDMP is a useful tool, four participants have access. The other 85 participants have not applied for access. The specialties with the most physicians with PDMP access are Pain Management (90.9%) and Emergency Medicine (77.5%). Specialties with 0% of individuals with access include Cardiology, Dermatology, Infectious Disease, Ophthalmology, and Urology (Table 5).

Table 4 Knowledge of PDMP by specialty (responding good, very good, or excellent)

Specialty	Knowledge %
Anesthesiology	7.7
Cardiology	0
Dermatology	20
Emergency medicine	82.5
Family practice	52.5
Infectious disease	0
Internal medicine	49
Neurology	57.1
OB/GYN	11.1
Ophthalmology	28.6
Orthopedics	0
Pain management	81.8
Pediatrics	16.7
Physiatrist	50
Plastic surgeon	33.3
Psychiatry	47.4
Urology	50

Table 5 PDMP access by specialty

Specialty	Access/Applied for Access %
Anesthesiology	7.7% have access
Cardiology	0% have access
Dermatology	0% have access
Emergency medicine	77.5% have access/1 individual applied for access
Family practice	52.5% have access/2 individuals have applied for access
Infectious disease	0% have access
Internal medicine	49.1% have access/3 individuals have applied for access
Neurology	14.3% have access
OB/GYN	11.1% have access
Ophthalmology	0% have access
Orthopedics	25% have access
Pain management	90.9% have access
Pediatrics	11.1% have access
Physiatrist	50% have access
Plastic surgeon	33.3% have access
Psychiatry	47.4% have access
Urology	0% have access

PDMP = prescription drug monitoring program.

Discussion

Studies evaluating physician use and attitudes of PDMPs are limited [12–17]. Clearly, physician PDMP studies demonstrate a need for prescriber education. Feldman et al. evaluated PDMP usage in an academic

medical setting and whether the program influenced prescribing behavior [12]. The voluntary and anonymous survey included questions regarding demographic data, awareness of the PDMP, reasons for accessing the system, and prescribing practice influences. The survey was distributed to 156 practicing physicians in the emergency medicine, internal medicine, neurology, pediatrics, and psychiatry departments in Ohio. The survey response rate was 61%, and 84% of participants were aware of Ohio's PDMP. Of the physicians aware of the PDMP, 58.8% reported utilizing the database. All physicians who were unaware of the state PDMP reported that they would utilize the program if they knew of its existence. Additionally, over 91% of physicians reported concern regarding prescription drug abuse as the top reason for accessing the database. Also, 93.6% of physicians accessing the PDMP reported that utilization influenced the type and quantity of medication prescribed. Approximately 68% of physicians reported switching the medication to a non-scheduled drug. Also, 30% of individuals were less concerned regarding prescribing controlled substances after accessing the PDMP [12]. Additionally, Feldman et al. evaluated the influence of attending physician awareness and utilization of a state prescription monitoring program on resident physician behavior [13]. Twenty-five attending physicians and 70 residents completed a survey regarding awareness and utilization of a state prescription monitoring program. The study found that residents were significantly more likely to use the system through the influence of supervising physicians [13].

Baehren et al. conducted a prospective study to evaluate the influence of the PDMP data on clinical management of emergency department patients with pain, and to identify factors associated with therapy changes in Toledo, Ohio [14]. The inclusion criteria specified patients 18 years and older with a chief complaint of painful conditions, and the participants were obtained as a convenience sample. The physicians were questioned regarding the likelihood of querying the PDMP databases for each patient and the probability of prescribing a controlled substance including which medication and quantity. Then the PDMP data were presented to the physician who then received the same questions to determine any changes in behavior. A total of 199 individuals were enrolled, and 179 patients completed the study. Prior to accessing the PDMP, physicians indicated a high likelihood (32%), moderate likelihood (26%), and low likelihood (36%) that controlled substances would be prescribed. The PDMP data demonstrated that there was an average of 18.9 prescription narcotics per patient over a 12-month period. After physicians reviewed the PDMP, opioid prescribing was changed for 41% of patients, with 61% of these resulting in fewer or no opioids compared with the presurvey. Additionally, 39% of patients were prescribed more pain medications than originally planned after reviewing the PDMP data [14].

Barrett et al. evaluated physicians' knowledge and attitudes toward the Virginia pilot PDMP for schedule II controlled substances and its impact on opioid prescribing behaviors [15]. A total of 672 physicians were

selected for the survey, and the response rate was 41%. Forty-eight percent of physicians had knowledge of the PDMP prior to receiving the survey. Of the study participants with prior knowledge of the PDMP, 40% were classified as family practice physicians, and 31% were categorized as internal medicine. Physicians had an average of 20 years of practice experience. Only 11% of physicians reported that they requested information about a patient's prescription record. Individuals that had not accessed the PDMP described reasons including a lack of knowledge regarding the ability to request information (40%), information not viewed as necessary (25%), and data not being available immediately (18%). Additionally, 60% of physicians believed that their prescribing practices were being monitored more closely as a result of the PDMP. Sixty-eight percent of physicians believed that the PDMP was useful for monitoring patients' schedule II prescription records including decreasing the incidence of doctor shopping with a significant association ($P < 0.001$) [15].

Perrone et al. evaluated the opinions of medical toxicologists toward opioid prescribing and their knowledge and use of PDMPs [16]. Also, opinions of their state's PDMP limitations were assessed. Surveys were sent to 445 individuals nationally, and the overall response rate was 46%. A majority of the respondents (78%) practice emergency medicine. The study found that 27.3% of participants reported in-depth knowledge regarding PDMPs, and a majority (87.2%) had at least some knowledge. More than 25% of participants did not access their state's PDMP because they were either not knowledgeable about the availability of the program in their state (13.5%) or not registered for access (12.4%). There were 50.6% of all respondents that have used their state's PDMP, with 30% of those accessing it daily, 47% weekly, and 23% monthly [16].

Weiner et al. compared emergency clinician impressions of drug-seeking behavior based on clinical evaluation with objective data from the Massachusetts PDMP through a two-site prospective, observational study [17]. Additionally, the study evaluated whether PDMP data changed prescribing behavior. Thirty-eight emergency providers with PDMP access participated in the study, with 544 patient encounters included. There was only fair agreement between emergency provider impressions and PDMP data. After reviewing PDMP data, emergency providers changed plans to prescribe opioids at discharge in 9.5% of cases (95% CI 7.3% to 12.2%), with 6.5% of patients receiving opioids not previously prescribed and 3% no longer receiving opioids [17].

This is the first published study to assess Florida physicians' knowledge and attitudes toward accessing the state prescription drug monitoring program. Additionally, this study surveyed a larger sample size than previous studies and unlike the others, did not limit the physician practice setting. There were 71.5% of participants that agreed or strongly agreed that the PDMP is a useful tool for monitoring patients' controlled substance

histories. All previously published studies also demonstrated that physicians believe PDMPs are useful tools. Of individuals conducting 25 or more searches via the PDMP, all believed it is a useful tool. Therefore, as individuals utilize the PDMP, they are more likely to believe in the PDMP's utility. There is high correlation between physicians that have good knowledge of the PDMP and those that have chosen to access the data. Therefore, this study has revealed that physician education regarding the PDMP increases utility and may have a positive outcome in terms of reducing access to prescription opioids and other controlled substances when in cases where multiple prescribers are sought. Physicians with access to the PDMP are more likely to feel that it will prevent "doctor shopping" than those who do not have access. This may be a result of what they see in practice. Also, a belief of being more closely monitored was associated with a decrease in controlled substance prescribing. Physicians utilizing the PDMP more frequently may have a positive impact since they are prescribing fewer controlled substances. This study did not evaluate whether a negative impact exists for legitimate patients due to physicians' fears of being more highly scrutinized and monitored by regulatory agencies. This is an important factor because as clinicians it is important to manage patients' pain while preventing prescription drug abuse [18]. Future studies may include targeting specific physician specialties, such as pain management, as the PDMP largely impacts these individuals. Only 11 pain management physicians responded to the PDMP usefulness question; therefore, the sample size was small. Emergency Medicine physicians should also be targeted as this study revealed that a majority of this specialty are knowledgeable of the PDMP and have access to the program. Previous studies have also demonstrated that Emergency Medicine physicians utilize the PDMP, although some states such as New York, Kentucky, and Tennessee, which otherwise require a database inquiry by prescribers, dismiss this obligation if the quantity is limited to a predetermined short supply by days or unit number [19]. The study revealed unexpected results for Infectious Disease physicians, as 0% agreed or strongly agreed that the PDMP was a useful tool. However, 75% thought it would decrease "doctor shopping." This may be indicative that in general they do not prescribe controlled substances and the PDMP is therefore not useful for their specialty. However, Infectious Disease doctors are presumably in a unique position to prescribe controlled substances for a patient population with very high substance abuse prevalence when one considers the cohort of patients with human immunodeficiency virus and/or hepatitis C virus [20]. This ominous finding may warrant further scrutiny. This study had limitations, such as the small response rate (7.8%), which may limit the generalizability of the study. The low response rate may be the result of surveying a number of physician specialists not impacted by the PDMP, especially as presumably they may prescribe few controlled substances with any regularity. The study found that individuals practicing longer tend to find the PDMP less useful. This may indicate that older physi-

cians may be less savvy with technology, which can be further evaluated in a follow-up study. Florida pharmacists should also be evaluated to assess their use and opinions of the PDMP.

Conclusion

The study revealed that a majority of participants believe that the PDMP is a useful tool for monitoring patients' controlled substance use, history of that use, and potential "doctor shopping." This study surveyed the largest amount of physicians compared with other similar studies from other state PDMPs regarding prescriber attitudes and knowledge toward accessing the Florida PDMP. Although the overall impact seems to have decreased controlled substance prescriptions, we do not know if there is a negative impact to legitimate pain patients in the state of Florida. Future studies should target specific specialties in Florida and also assess the overall positive and negative impact to legitimate pain patients as well as "doctor shoppers." Additionally, more continuing education programs should be provided to Florida physicians to enhance their knowledge regarding PDMPs.

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