

The Use of a Statewide Prescription Drug Monitoring Program by Emergency Department Physicians

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ABSTRACT

Background: Little is known about how emergency physicians have used Wisconsin's Prescription Drug Monitoring Program (PDMP).

Objective: To characterize emergency physician knowledge and utilization of the program and how it modifies practice.

Methods: Online survey data were collected 1 year after program implementation. Descriptive statistics were generated and qualitative responses were grouped by content.

Results: Of the 63 respondents, 64.1% had used the program. Lack of a DEA number and knowledge about how to sign up were the most common barriers to registration. Over 97% of program users found it useful for confirming suspicion of drug abuse and 90% wrote fewer prescriptions after program implementation. Time constraints and the difficult log-in process were common barriers to use. More users than nonusers stated that their workplace was supportive of program use.

Conclusions: Although barriers exist, PDMP utilization appears useful to emergency physicians and associated with modifications to patient management.

INTRODUCTION

In 2014, unintentional poisoning was the leading cause of injury deaths in the United States,¹ approximately 56% of which were related to prescription drugs.² After falls, drug overdose was the leading cause of Wisconsin injury deaths in 2013 and has surpassed motor vehicle traffic deaths since 2008.³ Multidisciplinary efforts are needed to address this epidemic at national, state, and local levels.

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States have responded to increases in prescription drug misuse and overdoses by implementing prescription drug monitoring programs, also known as PDMPs, which are statewide databases that collect information on scheduled and other selected drugs that have been dispensed.⁴ These programs serve several purposes, including to identify and prevent drug abuse and diversion and to identify and treat patients abusing or dependent on prescription drugs.⁴ Currently, 49 states either have operational programs or are in the process of implementing one.⁵ In 2013, Wisconsin implemented a fully operational PDMP.⁶ Dispensers and prescribers, their delegates, and other approved individuals⁴ have access to the database.

Most prescription drug monitoring programs became operational in the last decade⁶ and more evaluation on barriers and facilitators to program utilization, and how these programs affect clinical practice is needed. It is important to note that effective April 1, 2017, Wisconsin 2015 Act 266 requires physicians and other prescribers to review a patient's records from the ePDMP before issuing a prescription order for a controlled substance, with limited exceptions.⁷ However, this study sought to examine how Wisconsin emergency physicians used the PDMP prior to the mandate. To that end, we sought to examine how emergency physicians use the Wisconsin program. These physicians are in a unique position as they care for patients—many with whom they have no prior physician-patient relationship—who present with acute and chronic pain complaints. This study aimed to determine what emergency department physicians know about the Wisconsin PDMP, their opinions of the program, and how it affects their clinical decision-making.

METHODS

Study Population

This cross-sectional observational study was approved by the Human Research Protection Program at the Medical College of Wisconsin. Eligible participants included those members of the Wisconsin Chapter of the American College of Emergency Physicians who were on the organization's electronic contact list at the time of survey dissemination (N=386). Electronic study invitations and a survey link were disseminated to members on behalf of the researchers. Monetary incentives were not provided.

Prescription Drug Monitoring Program Questionnaire

The authors developed a deidentified questionnaire with 36 items. Initial questions identified respondents who had utilized the Wisconsin program during an emergency department shift. Those who were unaware of the program (n=2), aware but not registered (n=15), and registered but had not utilized it (n=5) were skipped out of subsequent questions related to program utilization. The 41 remaining respondents answered questions related to why, when, and how often they accessed the system. They also were asked about ease of use and impact on prescribing behaviors. Finally, all 63 respondents were asked about demographics, usefulness of the program, their past behaviors when they suspected patients were abusing prescription medication, and how the program had been promoted at their workplace. A final open response question provided opportunity for additional comments about the program.

Data Preparation

Continuous age was recoded into 10-year categories. A dummy variable was created to differentiate respondents on whether they had ever used the program during a shift. Skip patterns and minimal missing data resulted in varying response rates across questions. Content analysis was used to group qualitative comments and describe them with frequency counts and text quotations.

Data Analysis

Staff utilized STATA and results are descriptive in nature without hypothesis testing. Population estimates of Wisconsin emergency physicians from a Wisconsin Medical Society administrative database (N=459) were used to determine the "representativeness" of the study sample. A Chi-square goodness of fit test with Yate's correction for continuity and 2-tailed 1-sample Student's t-tests were used to compare the distributions of gender, age, and years of practice of responders and emergency physicians in the population database (expected proportions of .209 for females and .791 for males; continuous age [$\mu=50.2$, $\sigma=10.3$] and years in practice [$\mu=22.45$, $\sigma=10.3$]).

RESULTS

Sample Characteristics

Surveys were completed by 63 respondents for a response rate of 16.3%. Respondents practiced in 28 Wisconsin counties, with

Table 1. Emergency Physician Respondent Demographics and Characteristics

Demographics/Characteristics	Total (n=63) No. (%)	Program Users (n=41) No. (%)
Mean age (years) (SD)	42.7 (11.7)	44.4 (10.8)
Mean years in practice (SD)	15.2 (11.6)	16.3 (10.9)
Age groups		
26-35	23 (36.5)	10 (24.4)
36-45	14 (22.2)	14 (34.1)
46-55	10 (15.9)	7 (17.1)
56-67	11 (17.5)	8 (19.5)
Sex=male	45 (71.4)	31 (75.6)
Race		
African American	1 (1.7)	0 (0)
White	56 (93.3)	39 (95.1)
Hispanic/Latino	1 (1.7)	1 (2.4)
Asian/Pacific Islander	1 (1.7)	0 (0)
Other	1 (1.7)	0 (0)
Practice setting		
Urban	22 (34.9)	12 (29.3)
Suburban	23 (36.5)	15 (36.6)
Small town	15 (23.8)	13 (31.7)
Rural	2 (3.2)	1 (2.4)
Level of training		
Attending physician	53 (84.1)	38 (92.7)
Resident	10 (15.9)	3 (7.3)
Certification status		
Board certified in emergency medicine	47 (74.6)	36 (87.8)
Eligible for emergency medicine certification	7 (11.1)	4 (9.8)
No certification	8 (12.7)	2 (4.9)
Certified in non-emergency medicine specialties	5 (8)	2 (4.9)
Had used a program in another state	18 (28.6)	30 (73.2)
Work in an Emergency Department with a pain management protocol/pathway	39 (61.9)	26 (63.4)

Milwaukee and Dane counties being most represented (27.0% and 19.0% respectively). Table 1 provides respondent demographics and practice characteristics.

No significant difference between gender proportions in our study and the population database were found ($\chi^2(1)=1.81$, $P=.179$). There were significant differences in age ($t(62)=-4.74$, $P<.0001$) and years in practice ($t(62)=-2.81$, $P<.01$). Emergency physicians in the population database overall were older and had been practicing longer than our sample.

Wisconsin PDMP Awareness, Registration and Utilization

Of the 61 respondents who had heard of the Wisconsin PDMP, 24.6% were not registered. Main reported reasons for not being registered are presented in Table 2. Of the 46 registered respondents, 89.1% had used it during an emergency department shift.

Barriers and Facilitators to Wisconsin PDMP Use

Table 2 describes barriers for initiating program registration and

Table 2. Responses From the Survey Assessing Utilization, Perceived Usefulness, and Effect on Patient Management and Prescribing of the Wisconsin Prescription Drug Monitoring Program

Variable	Total (N=63)	Program Users (N=41)	Program Nonusers (N=22)
Barriers for initiating program registration (n=15)^a			
Don't know how			6 (40.0)
No Drug Enforcement Administration Number			5 (30.0)
Too difficult			3 (20.0)
No time			3 (20.0)
Tried and declined			1 (6.7)
Won't use			1 (6.7)
Barriers for ED use in registered, nonuser respondents (n=5)^a			
Too busy to log on			2 (40)
Forgot password or ID			2 (40.0)
Don't think about using it			1 (20.0)
Haven't needed it			1 (20.0)
Difficult log in process			1 (20.0)
Supportive workplace initiatives^a			
Supportive of your use of the program?	39 (61.9)	30 (73.2)	9 (40.9)
Employee education and awareness	26 (41.3)	16 (39.0)	10 (45.5)
Included program in policies related to care of patients with substance issues	8 (12.7)	6 (14.6)	2 (9.1)
Distributed promotional materials	6 (9.5)	4 (9.8)	2 (9.1)
Peer support system for use	5 (7.9)	4 (9.8)	1 (4.5)
Supervisor training program	0	-	-
A printout of patients' program report at triage would encourage use	51 (81.0)	33 (80.5)	18 (81.8)
Extremely or moderately useful for patient management in the ED	59 (93.7)	39 (95.1)	20 (90.9)
Past responses to patient suspicious medication use behavior^a			
Screened for drug use	22 (34.9)	17 (41.5)	5 (22.7)
Referred a patient to substance abuse treatment	21 (33.3)	18 (43.9)	3 (13.6)
Completed or revisited pain/ treatment agreement	21 (33.3)	11 (26.8)	10 (45.5)
Counseled on overdose risk factors, symptom recognition and response	35 (55.6)	24 (58.5)	11 (50.0)
Contacted patients' primary care physician	37 (58.7)	26 (63.4)	11 (50.0)
Referred to another provider	10 (15.9)	7 (17.1)	3 (13.6)
Conducted a urine screen	20 (31.7)	13 (31.7)	7 (31.8)
Informed law enforcement	3 (4.8)	3 (7.3)	0
Contacted patients' pharmacy	18 (28.6)	12 (29.3)	6 (27.3)
Nothing or ignored	7 (11.1)	2 (4.9)	5 (22.7)

^aRespondents were able to choose all that applied.

Abbreviation: ED, emergency department.

use. Most of the 23 open-ended responses referenced utilization barriers, including that the system was too cumbersome (43.5%) and it takes too much time to use (21.7%). These sentiments were described in the following comments: “The biggest challenge is the multiple pages that one has to go through to get to the info needed. Would be nice to have a link that takes you directly to the site or have a printout available at triage...” and “You have a valuable tool that no one is using because it requires a separate login and times out. Emergency physicians don't have the time to do this...” Four respondents expressed high regard for the system and three expressed interest in interstate sharing of data with neighboring states.

As seen in Table 2, many respondents' work environments had engaged in supportive activities related to the program and most felt that a printout of a patient's PDMP report at triage would encourage their use of the system's information.

Perceived Usefulness, Utilization, and Influences on Clinical Behaviors

As shown in Tables 2 and 3, most respondents reported that the information in the Wisconsin PDMP was useful. Table 3 shows that respondents utilized the program for various reasons and used various criteria for determining which patients to look up. Nearly all users reported that the information sometimes or often changed their management of a patient and over 70% reported writing fewer prescriptions for some medications since implementation of the program.

Past Responses to Suspicious Medication Use Behavior

As shown in Table 2, in general, more user than nonuser respondents had ever taken some selected actions upon finding suspicious, “drug-seeking” medication use by a patient.

DISCUSSION

Overall, respondents found the program useful and users reported

changing their management of patients after viewing program information. Users also changed prescribing behaviors after the program was implemented. In other studies, prescribers reported both increasing and decreasing prescription writing after accessing a prescription drug monitoring program.⁸⁻¹¹ Only 1 respondent in this study reported increased prescription writing. Of note is that we asked users about prescribing since Wisconsin program implementation, not specifically for after viewing information in the program. Program presence alone could contribute some influence on prescribing behavior, even outside of utilization. Future surveys in the state should ask how actual program utilization has affected prescribing behaviors, particularly since the mandate requiring prescribers to check the PDMP went into effect.

Similar to Green and colleagues,¹² we found that in general, more users than non-users had ever engaged in selected proactive responses when they suspected suspicious medication use. The Wisconsin PDMP may increase identification of suspicious medication use or physician willingness to engage in the selected responses. It could also be that physicians with certain experiences or personal attributes are more likely to utilize programs voluntarily.

Our results indicate that more program users than nonusers reported workplace support for its use. Like Perrone and colleagues,⁹ this study found lack of time to be a barrier to use. The complex login process and user interface also were barriers. Of note is that an updated version of the PDMP—the Enhanced Prescription Drug Monitoring Program (ePDMP)—was launched in January of 2017 to address some of these barriers. Future studies that collect data from prescribers after the mandate and launch of the ePDMP could provide important feedback on how these program and policy changes impact attitudes and behaviors, especially in comparison to our data which was collected before these changes went into effect. The Wisconsin program allows prescribers to designate delegates to check the system on their behalf, and over 80% of this study’s respondents said that having a printout of a PDMP report at triage would encourage their use of the information. Clinical environments could consider actively supporting program use, as well as system-level changes to facilitate the identification of delegates and

Table 3. Affirmative Responses From the Survey Assessing Utilization, Perceived Usefulness and Effect on Patient Management and Prescribing of the Wisconsin Prescription Drug Monitoring Program (PDMP)

Variable	Total (%) N=41
How often respondents used the PDMP	
Once a week or less	12 (29.3)
2 to 4 times a week	13 (31.7)
5 or more times a week	16 (39.0)
Ease of use of the PDMP	
Somewhat or very easy to use	20 (48.8)
Somewhat or very difficult to use	15 (36.6)
Why emergency physicians use the Wisconsin PDMP^a	
Identify Rx drug abuse	41 (100)
Confirm a patient’s story	33 (80.5)
Identify a patient’s provider	17 (41.5)
View a patient’s current medications	15 (36.6)
Identify a patient’s pharmacy	13 (31.7)
View own prescribing history	5 (12.3)
Avoid drug interactions	3 (7.3)
How respondents determine which patients to look up in the Wisconsin PDMP^a	
Certain complaints	39 (95.1)
Patients with a history of frequent visits to the ED	38 (92.8)
Clinical intuition	37 (90.2)
Patient requests paid medications	35 (85.4)
Multiple allergies to non-narcotic pain meds	34 (82.9)
Lack of response to pain medications in the ED	14 (34.1)
All patients currently on controlled substances	6 (14.6)
All patients before prescribe a controlled substance	3 (7.3)
Useful as confirmation of clinical suspicion of drug abuse or misuse	40 (97.6)
Wisconsin PDMP sometimes or often changed patient management	37 (90.3)
Wrote more prescriptions than before the PDMP was implemented^b	1 (2.4)
Wrote fewer prescriptions than before the PDMP was implemented^c	29 (70.7)
Opioids in general	26 (63.4)
Benzodiazepines	10 (24.4)
Schedule II opioids	5 (12.2)
Schedule III opioids	4 (9.8)
Tramadol	2 (4.9)

^a Respondents were able to choose all that applied.

^b The respondent reported writing more nonscheduled opioids.

^c No respondents reported writing fewer prescriptions for Schedule IV opioids, barbiturates, stimulants, or antidepressants.

efficient incorporation of the program into clinical workflows.¹³

Our study had several limitations. We sent a reminder to complete the survey but experienced low response rates commonly reported with physician samples.^{12,14} Low response rates have raised concerns about nonresponse bias or the likelihood that nonresponding physicians will be systematically different from the population under study.¹⁴ This concern is supported by research showing modest differences between responders and nonresponders and between early and late respondents on demographic and/or practice-related characteristics.¹⁴

Respondents were emergency physicians who were members of a local professional association and our results cannot be generalized to all Wisconsin prescribers. Our sample was significantly younger and had fewer years of clinical experience compared to emergency physicians in Wisconsin. Future studies should survey

broader, representative samples of prescribers and within other specialties. Finally, our results are observational in nature and results should be viewed as tentative until statistical analyses are performed on a larger, more representative sample.

CONCLUSION

Respondents reported that the Wisconsin Prescription Drug Monitoring Program has value for clinical care. It is currently one of the most accessible ways for prescribers to identify patients at risk of prescription abuse and overdose and to counsel and refer patients who abuse or are dependent on controlled substances. At the same time, it may allow prescribers to more accurately treat those who are in legitimate need of prescription medications. Our results indicate that respondents found the system useful and that it influenced patient management, perhaps leading to improved prescribing stewardship. System modifications may make it more user-friendly and responsive to the needs of clinical environments. The effect of this system on clinical practice should continue to be monitored in order to maximize efficiency, usefulness, and ability to serve its purpose.

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