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SUMMARY OVERVIEW
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Abstract

Reduced diversion (e.g., doctor shopping, theft, prescription forgery, illegal sale by physicians, patients, or pharmacists) and abuse of prescription drugs are goals for all prescription drug monitoring programs (PDMPs). However, there is variability in how individual states implement and operationalize these programs, including policies and mechanisms for law enforcement access and utilization. This project used qualitative and quantitative methods to examine law enforcement use and perceptions of PDMPs. Findings suggest that training in how to access the PDMP and interpret PDMP reports are important factors in how law enforcement personnel perceive the utility and effectiveness of PDMPs. In addition, law enforcement personnel view lack of access to PDMP data from surrounding states as a hindrance to investigations. The variability in how states permit law enforcement access to PDMP data should be further studied to clarify the impact of various access designs on PDMP goals, including reductions in abuse, diversion, morbidity and mortality related to illicit prescription drug use.

Introduction

Prescriptions for controlled substances, particularly opioids, have increased substantially over the last 15 years [Governale, 2010]. An undesirable accompaniment to this increase is the growing prevalence of prescription controlled substance abuse, diversion and mortality due to overdoses [Paulozzi et al., 2012; Gu et al., 2010]. Currently, the death-rate for prescription opioids exceeds that for cocaine and heroin combined [CDC, 2011; Paulozzi, 2006]. In contrast to illicit drugs, misused prescription drugs frequently originate from seemingly legitimate prescription orders issued by licensed health care providers [Katz et al., 2008]. In response to public health and law enforcement concerns about escalating abuse and diversion states created oversight programs for controlled prescription drugs [Deyo et al., 2013]. With the exception of Missouri, all states have implemented prescription drug monitoring programs (PDMPs) as a policy tool to mitigate abuse, diversion and overdoses [NAMSDL, 2015].* As a data repository, the PDMP contains information (prescriber, dispenser, patient, drug, dose and amount dispensed) for each prescription controlled substance dispensed to patients within the state.

Although reduced diversion (e.g., doctor shopping, theft, prescription forgery, illegal sale by physicians, patients, or pharmacists) and abuse of prescription drugs is the common goal for all

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*Implementation of Washington D.C.'s PDMP is pending as of December, 2014 [NAMSDL, 2015].

2

programs, there is considerable variability across states in how PDMPs are implemented and operationalized. Law enforcement access and utilization of PDMP data is one area where states exhibit variation [NAMSDL, 2015]. Privacy advocates [ACLU, 2014] and patients [Fishman et al., 2004] have expressed concerns related to PDMP access by non-health professionals due to the privacy of personal health information housed within PDMPs. Access limitations are one mechanism that can be implemented to uphold privacy and confidentiality; however, access limitations may also affect the potential utility of these programs for achieving the goal of reduced abuse and diversion.

Emerging research suggests that PDMPs may slow the growth-rate in prescription opioid misuse [Reifler et al., 2012] and reduce oxycodone-related mortality [Delcher et al., 2015]. However, it is unclear whether these findings are a result of PDMP use by health care providers, use by law enforcement officials, a combination of both, or some other factor. Clarifying law enforcement use of PDMPs and identifying features that support diversion investigations is an important component of identifying best practices for PDMPs as states continue to evolve and modify their operations. The purpose of this project was to characterize PDMP features and practices that support law enforcement use of PDMPs. The following four objectives were accomplished as part of the project:

1. Compare and contrast current enabling legislation, structural features and operational procedures for select PDMPs.
2. Analyze law enforcement access to and utilization of PDMP reports.
3. Analyze law enforcement personnel perceptions regarding the value and impact of PDMP reports.
4. Identify key features of PDMPs that are optimal for supporting law enforcement investigations.

Methods

Project Design: Qualitative and quantitative methods were used to examine a sample of nine state PDMPs. Kentucky, Ohio, and West Virginia were selected to provide an Appalachian perspective where the epidemic of prescription drug abuse and diversion is especially prevalent [Hall et al, 2008]. Indiana was included because it borders both Kentucky and Ohio. To capture a national perspective, five additional states (Massachusetts, New Mexico, Nevada, Oklahoma and Washington) were selected based on geographic location and/or distinctive PDMP features. The

3

project was reviewed and approved by the University of Kentucky and University of Louisville Institutional Review Boards.

Project 1: Interviews with PDMP Managers: Structured, systematic interviews with PDMP managers from the nine states were conducted to document current enabling legislation, structural features, and operational procedures for each program. Information gleaned from these interviews informed the development of survey items (Project 2) and focus group questions (Project 3) that were used to identify program features linked to law enforcement activities and perceptions.

Project 2: Surveys of Law Enforcement Personnel: To evaluate use and perceived impact of PDMP reports and identify PDMP features that optimize law enforcement abuse and diversion related activities, all law enforcement personnel (including officers, regulatory agents, and prosecutors) with active PDMP accounts in the nine states were invited to participate in an online survey. Relevant findings from Project 1 were integrated with information gleaned from previous law-enforcement personnel surveys [Freeman et al., 2010] to develop the survey items. Prior to fielding the survey, PDMP managers from the nine states and retired Kentucky law enforcement personnel reviewed and provided comments on the survey items. Research Electronic Data Capture (REDCap) [Harris et al., 2009] was used to facilitate data collection.

In each state, all law enforcement personnel registered with the PDMP received an email from the PDMP manager that contained an explanation of this National Institute of Justice funded project, a link to the consent form / survey instrument, and a letter encouraging participation in the survey. Two reminder emails containing the same information were sent at two-week intervals. After informed consent was obtained, respondents were directed to the survey where they were permitted to skip survey items that they did not wish to answer. Those who did not consent to participate were not permitted to view the survey.

Binary survey data were summarized as frequencies (percentages) with the total number of respondents for each survey item as the unit of analysis. Continuous survey data were summarized using means (standard deviation) or medians (interquartile range). Regression models examined response differences for items assessing the overall perception of the PDMP and the PDMP's impact on drug abuse and diversion using respondent characteristics as control variables. Data were analyzed in Stata v13.1 (StataCorp LP, College Station, TX).

4

Project 3: Focus Groups of Law Enforcement Users: A deeper exploration of the impact of various PDMP features was obtained through focus group interactions with law enforcement personnel in four states (Indiana, Kentucky, Ohio, and West Virginia). Discussion items used to guide the focus group conversations were developed based on information gleaned from PDMP manager interviews (Project 1) and law enforcement personnel survey responses (Project 2). Focus group participants were recruited from annual state narcotics officers' association meetings (Indiana Drug Enforcement Association, Kentucky Narcotics Officers Association, Ohio Narcotics Association of Regional Coordinating Officers, and the West Virginia Narcotics Officers Association). Prior to participation, informed consent was obtained from each participant. The sessions lasted approximately one hour and participants received $50 compensation for their time

Major Findings

Project 1*:* Systematic interviews with PDMP managers allowed for documentation and comparison of the policies and operating procedures for each state PDMP. Using structured case report forms the following information was collected: enabling legislation; housing agency, staff and funding; controlled substance Schedules monitored; frequency of data collection; access policies; solicited and unsolicited reporting policies; data sharing policies; and data security and quality. Table 1 provides a brief synopsis of state-specific information collected during the interviews. Notable findings include the variability in unsolicited reports. Six states currently provide unsolicited reports to professional regulatory boards. However, only three provide unsolicited reports to law enforcement personnel, and while three additional states have authorization to do this, they are not currently doing so. Five of the states do not require training for law enforcement users; two states include training as a programmatic feature but formal training programs are not currently available.

Project 2*:* Survey data were collected between September and November 2013. Email invitations for survey participation were sent to all law enforcement officials with active PDMP accounts in the nine states. Response rates ranged from 14.1% (Oklahoma) to 72% (West Virginia) (Table 2.1). Professional role categories were based on self-classification; most respondents (58.3%) were city/county law enforcement officials (Table 2.2). For analytic purposes, city/county law enforcement, state law enforcement, and sheriffs were grouped as 'law enforcement', while Drug Enforcement Administration and regulatory agency personnel were grouped as 'Regulatory Agents'.

5

Law enforcement officials investigate/prosecute a median of 15 (interquartile range (IQR): 8-40) prescription drug abuse/diverse cases annually; the median for regulatory agents and prosecutors is 23 (IQR: 10-50) and 100 (IQR: 35-250), respectively. Overall, most respondents (82.7%) believed that they had received adequate training on how to use a PDMP report in an investigation (state results shown in Table 2.3), although respondents who self-identified as prosecutors expressed a lower level of agreement to this item (67.9%) compared to law enforcement (82.3%) and regulatory agent (87.2%) respondents.

Using a ten-point scale anchored at "extremely valuable" (10) and "not valuable"(0), respondents ranked PDMP reports as highly valuable in their investigations (overall mean = 8.8; overall median = 9.6; state results shown in Table 2.4). A majority of respondents agreed (51%) or strongly agreed (38%) that the PDMP is an effective tool to reduce doctor shopping within their state; similarly, most agreed (55.7%) or strongly agreed (32.7%) that the PDMP is an effective tool to reduce drug abuse and diversion within their state (state results shown in Tables 2.5 and 2.6).

Multivariate analyses using Poisson regression models were conducted to identify factors associated with the perceived value of PDMP reports and effectiveness of the report as a tool to reduce prescription drug abuse and diversion. A goodness-of-fit test determined that Poisson regression was appropriate for the data. Control variables included: rural/urban jurisdiction; law enforcement department; years in department; annual number of abuse/diversion cases; use of PDMPs; and perception of PDMP training. The model assessing perceived effectiveness for decreasing abuse and diversion also included perceived value as a control. Results of the models are shown in Tables 2.7 and 2.8.

Respondents who indicated they had received adequate PDMP training valued the PDMP 16% more, on average, compared to respondents who did not receive adequate training. Greater use of PDMP reports was also positively associated with higher perceived value. A 6% lower value was reported by "other law enforcement" compared to municipal police. No association was found for the remaining control variables (Table 2.7).

Receiving adequate training was also positively associated with perceptions of PDMP effectiveness at reducing abuse and diversion. Respondents reporting adequate training were 16% more likely to agree that PDMPs are effective compared to those who did not receive

6

adequate training. The perceived value of the PDMP was also positively related to perceived effectiveness; for each one-increment increase in PDMP value, law enforcement were five percent more likely to agree that PDMPs are effective for reducing prescription drug abuse and diversion in their state. No association was found for the remaining control variables (Table 2.8).

Project 3: Four focus group sessions were conducted between February and October 2014. Each session included five to eight law enforcement personnel from within the state. Because the participants were recruited from State Narcotic Officers Association meetings, all participants had knowledge of and experience with drug abuse and diversion investigations. Sessions lasted approximately 60 minutes.

Participants in all groups strongly endorsed PDMP reports as an essential tool to streamline drug abuse and diversion investigations. Furthermore, all participants agreed that the timeliness and quality of PDMP report data met their investigational needs. When asked to describe the PDMP training they received, responses ranged from "zero training" to "I've had two to three classes where the PDMP was explained". Participants believed that the reports were easy to comprehend and contained information that was helpful in their investigations. Participants were asked to articulate the potential benefits of "real time" data (i.e., data uploaded to the PDMP immediately upon dispensing the medication) compared to "daily" or "weekly" data (i.e., data uploaded to the system within 24 hours or within seven days of dispensing). The majority of participants were very satisfied with daily data-uploads, and noted that this was strongly preferred over weekly data-uploads. Participants did not express a strong preference for "real-time" data collection, although some participants suggested that "real-time" data would make PDMP data more similar to pseudoephedrine sales data that is currently available within the National Precursor Log Exchange (NPLEx). Participants were asked if merging the NPLEx and PDMP systems would be useful; responses were mixed with a small number of participants in favor of including pseudoephedrine on PDMP reports and a small number preferring to keep pseudoephedrine within NPLEx.

Reporting features, such as Global Positioning Signal (GPS) mapping and the ability to download PDMP reports as Excel files to permit data manipulation were explored. Overall, enthusiasm for these features was subdued, although the small number of participants who had experience with downloading reports in Excel found this capability to be very advantageous, particularly in investigations involving health care providers, where many thousands of prescriptions may be involved.

The most common complaints that participants voiced about PDMPs were access related issues, including who may request a PMDP report and access to PDMP information from adjacent states. Access restrictions are not uniform across states and can be overt or subtle in their manifestation. For example, some states explicitly restrict which law enforcement personnel may access the PDMP system, and all requests for reports must flow through these few individuals. Other states appear to have restrictions that are less obvious, in that they appear to be mediated through nuanced case-jurisdiction issues (e.g., federal vs. non-federal investigations). Because focus group sessions did not include federal law enforcement officials, it was not possible to fully explore these nuances.

Without question, the most vociferous complaint about PDMPs was limited and/or cumbersome access to PDMP reports in adjoining states. There was unanimous agreement that multi-state PDMP report access should be straightforward and seamless (i.e., no additional paperwork, permissions, or certifications necessary once an officer holds a PDMP account within his/her own state). As noted by one participant "I should be able to get the report from my state and every surrounding state just by pushing one button".

Discussion, Conclusions and Implications for Policy and Practice

All PDMPs share a common goal of reducing illicit activity related to prescription drugs and the negative health consequences associated with misuse of these important therapies. Emerging evidence suggests that recent legislation addressing PDMPs and pain clinics in some states is associated with reductions in abuse, diversion and overdose mortality [Delcher et al., 2015; Freeman et al., 2015; Reifler et al., 2012]. Authors of these reports were not able to definitively identify the characteristics and/or operational features of PDMPs that had the strongest contribution to these positive outcomes. Intuitively, which professionals are able to access PDMPs and how they use information in the report are important considerations in determining the efficacy of PDMPs, although few researchers have addressed these issues. As an initial step to help clarify how law enforcement personnel use PDMP reports, this project used a multi-pronged approach, including interviews with PDMP managers and staff, surveys of all law enforcement personnel registered to use PDMPs, and focus groups with a subset of law enforcement personnel.

One important finding is variations in PDMP training across states. Given the public's concerns related to privacy, optimal PDMP training should include the purpose of PDMP

reports, the private and confidential nature of the report, and how to appropriately interpret data contained within the report. Because PDMPs are relatively new, many law enforcement officials are unfamiliar with them. Furthermore, guidance on how reports can best be used continues to be updated and clarified [Clark et al., 2012]. Five of the nine states evaluated in this project do not require law enforcement personnel to obtain PDMP training. In the four states that do require training, only two had active, formal training programs. The fact that some PDMP managers noted plans for implementing new, intensive in-person training programs suggests that PDMPs are recognizing the importance of substantive training for optimal PDMP report use. Focus group discussions indicated a fairly diverse range of training, including no training, training by trial-and-error, informal peer teaching, and formal programs provided by PDMP staff. Survey findings suggest that most respondents agree that they have received adequate training (and therefore seemingly do not perceive a need for additional training); however, nearly one-third of prosecutor respondents did not agree that they had received adequate training, suggesting that this important user-group may be overlooked when training is provided. Moreover, those who believed they had received adequate training placed a higher value on PDMPs and were more apt to believe the programs are important tools for decreasing prescription drug abuse and diversion compared to survey respondents who did not agree they had received adequate training. Whether those respondents who received training were more adept at using PDMP reports, and therefore more successful in their investigative pursuits, is an important question that this research was not able to answer.

While funding and personnel issues may be constraining programs in their ability to provide training, it may also be possible that the value of training has been underestimated, both by PDMP administrators and law enforcement personnel. The authors of this report have identified a similar issue with health professionals, where prescribers and pharmacists have historically shrugged-off the need for PDMP training, although this historic behavior pattern may be changing as states mandate prescriber use of PDMP reports prior to issuing a controlled substance prescription.

Some PDMP "compendia" note law enforcement access as a feature for nearly all PDMPs in the US. This project found that law enforcement access is variably operationalized across states. This is evidenced, in part, by the nearly ten-fold variation in the number of law enforcement personnel who are registered PDMP users in the nine states, ranging from 26 to 2,591 (Table 2.1). Some states permit any law enforcement official to register with the PDMP

and access it when actively pursuing a case involving illicit use of prescription drugs. Other states restrict access to a small subset of specialized officers, perhaps as a safeguard against potential privacy concerns. Future research is warranted to evaluate the impact that various law enforcement access models have on a number of important outcomes, including abuse and diversion cases, morbidity and mortality associated with illicit prescription drug use, and public perception of the PDMP.

In summary, this work suggests three implications for optimizing PDMPs to support law enforcement activities. First, formal instruction on how to appropriately and efficiently access and interpret PDMP reports should be implemented in all states and required for all professionals, including law enforcement, who access PDMP reports. Second, direct access to PDMP reports should be permitted for any officer involved in drug abuse/diversion cases. Finally, access to national, or at least regional, PDMP reports should be seamless, without additional paperwork or permissions. These suggestions should be considered by states as they continue to refine the operations of their PDMPs to enhance their effectiveness at reducing prescription drug abuse and diversion.

It is important to note several limitations regarding these conclusions. First, the official number of diversion and abuse cases pursued and successfully prosecuted in each state were not assessed; thus, the direct impact of PDMPs on successful prosecutions of drug abuse and diversion cases was not evaluated. Second, the survey item addressing training did not clearly delineate the manner in which training was delivered (e.g., training from peers who have experience with the PDMP vs. officially sanctioned and systematically delivered training provided by PDMP officials). It is likely that training quality would vary depending on who is providing the training and how it is delivered. Finally, individuals who participated in the focus group sessions were a highly specialized subset of law enforcement officials (i.e., narcotics officers). While it is probable that this group adequately represents knowledgeable users of PDMPs, it is not clear that their opinions are representative of all law enforcement officials.

Table 1: Project 1 PDMP Manager Interviews

	IN	KY	MA	NV	NM	OH	OK	WA	WV
Years in Existence[1]	19	14	21	16	9	8	23	1	18
Controlled Substance Schedules Monitored	2-5	2-5	2-5	2-4	2-5	2-5	2-5	2-5	2-5
Housing Agency[2]	4	1	2	3	3	3	0	2	3
Data Collection Frequency[3]	2	1	2	2	2	2	0	2	1
Unsolicited Reports to Law Enforcement[4]	1	0	3	2	0	2	2	0	1
Unsolicited Reports to Regulatory Boards[4]	2	2	2	2	2	2	0	1	1
Direct Access for Law Enforcement[5]	1	1	1	0	0	0	0	1	0
Training for Law Enforcement[6]	0	0	1	2	2	0	0	0	1

[1]Years since initial inception per PDMP manager interview (as of 2013)

[2]0 = Law Enforcement Agency; 1 = Public Health/Law Enforcement Agency; 2 = Department of Health / Public Health; 3 = Board of Pharmacy; 4 = Professional Licensing Agency

[3]0 = Real time; 1 = Daily; 2 = Weekly

[4]0 = No; 1 = Authorized to do so but have not to date; 2 = Yes; 3 = Have in the past but none since 2010

[5]Dichotomized based on "any law enforcement official may be log-in-credentialed"; 0 = No; 1 = Y

[6]0 = No; 1 = Yes; 2 = No official training (as of 2013)

Table 2: Project 2 Survey Findings

Table 2.1. Survey Response Rate by State

	IN	KY	MA	NV	NM	OH	OK	WA	WV
Registered Users	1463	1636	78	42	36	2591	736	173	26
Undeliverable Invitations (percent)*	220 (15%)	531 (32.5%)	4 (5.1%)	0 (0%)	0 (0%)	371 (14.3%)	12 (1.6%)	0 (0%)	1 (3.8%)
Response Rate	19.3%	27.3%	25.7%	57.1%	16.7%	20.5%	14.1%	37.0%	72.0%

*Email system was unable to deliver survey invitation to the email address; the reason for non-delivery is unknown.

Table 2.2. Survey Responses by Law Enforcement Professional Role (n=1378)

	City / County	State	Sheriff	Drug Enforcement Administration	Regulatory Agency	Prosecutors
Responses (%)	803 (58.3)	219 (15.9)	76 (5.5)	40 (2.9)	195 (14.2)	45 (3.3)

Table 2.3. Survey Responses: "Do you believe you have received adequate training on how to use an individual PDMP report as a tool in an investigation?"

	IN (n=214)	KY (n=279)	MA (n=19)	NV (n=24)	NM (n=5)	OH (n=413)	OK (n=93)	WA (n=59)	WV (n=16)
Yes	86.4%	83.2%	84.2%	87.5%	80%	82.3%	74.2%	76.3%	93.75%
No	13.6%	16.8%	15.8%	12.5%	20%	17.7%	25.8%	23.7%	6.25%

Table 2.4. Survey Responses: "Using the scale where 0 = "Not Valuable" and 10 = "Extremely Valuable", how valuable are PDMP reports to your investigations?"

	IN (n=211)	KY (n=269)	MA (n=17)	NV (n=24)	NM (n=5)	OH (n=399)	OK (n=90)	WA (n=55)	WV (n=16)
Mean	8.9	8.8	8.6	9.3	9.4	8.8	8.7	8.8	8.7
Median	9.6	9.5	9.1	9.9	9.7	9.5	9.8	9.7	9.5

Table 2.5. Survey Responses: "To what extent do you agree with the following statement: The PDMP is an effective tool to reduce doctor shopping in my state."

	IN (n=196)	KY (n=259)	MA (n=19)	NV (n=22)	NM (n=5)	OH (n=376)	OK (n=86)	WA (n=53)	WV (n=15)
Strongly Agree	33.7%	44.4%	26.3%	54.6%	20%	37.2%	31.4%	35.9%	33.3%
Agree	51.5%	49.8%	52.6%	31.8%	60%	51.1%	55.8%	52.8%	66.7%
Disagree	11.7%	3.5%	21.1%	13.6%	0%	6.9%	9.3%	9.4%	0%
Strongly Disagree	3.1%	2.3%	0%	0%	20%	4.8%	3.5%	1.9%	0%

Table 2.6. Survey Responses: "To what extent do you agree with the following statement: The PDMP is an effective tool to reduce drug abuse and diversion in my state."

	IN (n=194)	KY (n=258)	MA (n=19)	NV (n=21)	NM (n=5)	OH (n=371)	OK (n=84)	WA (n=52)	WV (n=15)
Strongly Agree	30.4%	34.5%	21.1%	38.1%	20%	35.0%	21.4%	34.6%	40.0%
Agree	55.2%	55.4%	68.4%	42.9%	80%	53.4%	64.3%	59.6%	60.0%
Disagree	11.3%	7.0%	10.5%	19.9%	0%	6.7%	11.9%	5.8%	0%
Strongly Disagree	3.1%	3.1%	0%	0%	0%	4.9%	2.4%	0%	0%

Table 2.7. Poisson Regression Results: Factors influencing the perceived value of PDMP reports. (n=1096)

Variable	Incidence Rate Ratio	p-value	95% Confidence Interval	
Rural/Urban				
Urban	Ref.			
Rural	1.003	0.821	0.974	1.034
Department				
Municipal Police	Ref.			
State Police	0.997	0.895	0.959	1.037
Sheriff's Office	0.997	0.877	0.955	1.040
Other Law Enforcement	0.943	0.002	0.909	0.978
Years in current department				
1-5	Ref.			
6-10	1.000	0.994	0.950	1.052
11-15	0.992	0.764	0.942	1.045
16-20	0.987	0.620	0.935	1.041
21+	0.995	0.846	0.942	1.050
Average number of prescription drug abuse and diversion cases investigated annually				
None	Ref.			
1-10	1.049	0.392	0.941	1.169
11-20	1.018	0.745	0.914	1.133
21-50	1.055	0.330	0.947	1.175
51+	1.071	0.227	0.958	1.197
Perception of adequate training to use PDMP reports				
Have not received adequate training	Ref.			
Have received adequate training	1.157	<0.001	1.085	1.235
Number of reports used in the previous one month (quartiles)				
0-25%	Ref.			
26-50%	1.047	0.049	1.000	1.096
51-75%	1.058	0.005	1.017	1.100
76-100%	1.094	<0.001	1.052	1.139
Perceived effectiveness of PDMPs				
Reduce doctor shopping	1.109	0.661	0.938	1.107
Reduce prescription drug abuse and diversion	1.082	0.081	0.990	1.181

Table 2.8. Poisson Regression Results: Factors influencing the perceived effectiveness of PDMPs as a tool to reduce abuse and diversion (agree/disagree). (n=1096)

Variable	Incidence Rate Ratio	p-value	95% Confidence Interval	
Rural/Urban				
Urban	Ref.			
Rural	1.006	0.853	0.948	1.067
Department				
Municipal Police	Ref.			
State Police	1.057	0.217	0.968	1.155
Sheriff' s Office	1.074	0.073	0.993	1.161
Other Law Enforcement	1.045	0.218	0.974	1.120
Years in current department				
1-5	Ref.			
6-10	0.974	0.614	0.879	1.079
11-15	1.004	0.930	0.917	1.100
16-20	0.994	0.909	0.892	1.107
21+	0.996	0.939	0.904	1.098
Average number of prescription drug abuse and diversion cases investigated annually				
None	Ref.			
1-10	1.114	0.163	0.957	1.296
11-20	1.086	0.295	0.930	1.269
21-50	1.022	0.797	0.867	1.204
51+	1.036	0.691	0.869	1.235
Number of requests for reports made directly to the PDMP system in the previous year (quartiles)				
0-25%	Ref.			
26-50%	0.989	0.806	0.906	1.079
51-75%	0.960	0.374	0.878	1.050
76-100%	0.930	0.184	0.836	1.035
Number of PDMP reports used in the previous one month (quartiles)				
0-25%	Ref.			
26-50%	0.980	0.638	0.899	1.067
51-75%	1.004	0.915	0.929	1.085
76-100%	1.006	0.894	0.917	1.105
Perception of adequate training to use the PDMP system and reports				
Have not received adequate training	Ref.			
Have received adequate training	1.157	0.043	1.005	1.333

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