

RESPOND Pharmacy Education Toolkit: AHRQ Final Report

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## Structured Abstract

**Background.** Pharmacists' roles in addressing the opioid crisis continues to expand, but lack of training specifically related to standardized prescription drug monitoring program (PDMP) use and communication strategies for provider and patient interactions remains a significant issue.

**Scope.** The purpose of this project was to develop the Resources Encouraging Safe Prescription Opioid and Naloxone Dispensing (RESPOND) Toolkit to enhance community pharmacists' use of Prescription Drug Monitoring Program (PDMP) data to improve opioid safety.

**Methods.** RESPOND development was informed by focus groups with patients, prescribers, and pharmacists as well as an external advisory committee. RESPOND was tested in two distinct pilot evaluations. We tested the initial iteration of RESPOND in six retail-based pharmacies in Oregon over two 6-month periods. We then tested a refined version of RESPOND among 133 pharmacists in Oregon. Outcomes involved pharmacists' attitudes, practice self-efficacy, barriers, and perceived behavior control related to opioid misuse, opioid use disorder, and PDMP use.

**Results.** The developed toolkit included a patient screening and communication algorithm, a provider communication checklist, and three online asynchronous educational modules. The final pilot demonstrated that the RESPOND Toolkit was effective at significantly improving perceived behavioral control and changing attitudes toward OUD, perceived barriers to address prescription opioid misuse, and PDMP attitudes. A moderate effect was observed for objective knowledge gains across the modules.

**Key words.** Pharmacists, opioid safety, educational toolkit

## Purpose

The purpose of this study was to increase patient safety and reduce opioid-related harms by developing and disseminating an educational toolkit with the goal of improving pharmacists' knowledge on the opioid epidemic, integration of the Prescription Drug Monitoring Programs (PDMPs) into their daily workflow, and communication with patients and providers about opioid medications. This project had three specific aims:

- 1) Develop policies and procedures for how community pharmacists can effectively use the PDMP at the point of care to increase patient safety and reduce opioid-related harms. This aim is achieved through conducting focus groups and key informant interviews with stakeholders to inform the development of feasible and patient-centered policies and procedures for using the PDMP to reduce unsafe opioid prescribing and by developing a toolkit with education, resources, procedures, and scripts to pilot test in a community pharmacy setting.
- 2) Implement, refine, and evaluate the PDMP toolkit in six community pharmacies to address the hypothesis that implementation of the toolkit will result in improved knowledge and perceptions of self-efficacy and behavior change in pharmacists dispensing opioid medications.
- 3) Evaluate whether implementation of the PDMP toolkit results in safer opioid use to address the hypotheses that pharmacies using the PDMP toolkit will a) dispense a lower proportion of opioid prescriptions overall and b) show a reduction in the proportion of potentially risky opioid dispensing compared with the control sites.

## Scope

The current opioid crisis in America has led to the expansion of public health efforts across multiple settings, including community pharmacies.<sup>1</sup> The pharmacists' role in addressing opioid safety has grown substantially over the past 5 years,<sup>2,3</sup> with an increasing number of interventions focused on improving Prescription Drug Monitoring Program (PDMP) use in pharmacy settings<sup>4</sup> and pharmacy-based naloxone distribution.<sup>5-7</sup>

Yet, important barriers remain in pharmacists' willingness to engage with these initiatives and, most importantly, their willingness to engage with patients and prescribers to address opioid safety concerns. Among the most often reported barriers are 1) lack of experience and education using the PDMP, 2) fear of instigating patient confrontations and physical altercations, 3) concerns about losing customers/business, and 4) inadequate time to engage with at-risk patients.<sup>4,8-12</sup> Each of these four barriers stem from two common themes: lack of education in available resources and use of effective communication strategies.

To address these common barriers, we developed an educational program known as the RESPOND Toolkit with resources for pharmacists and educational modules that focus on improving knowledge on the opioid epidemic, utilizing the PDMP, and communicating with patients and providers. Our goal was to develop the toolkit and pilot test it with community pharmacists who work in a large retail pharmacy chain in Oregon.

## Methods

The RESPOND Toolkit is a package of resources and trainings designed to increase knowledge and use of the PDMP and improve pharmacist-patient and pharmacist-prescriber communication in community pharmacies. It was developed and refined over a 3-year period (2015 – 2018) through multiple rounds of feedback from external advisors and community pharmacists. The development period saw the creation of the three educational modules (Module 1: Anatomy of an Epidemic, Module 2: Understanding PDMPs, and Module 3: Communicating with Prescribers and Patients) and two resources to assist pharmacists in integrating material into community pharmacy workflows. These resources were a communication algorithm and checklist, both of which provide pharmacists with "safety triggers" alerting them to potential opioid-related harms, followed by compassionate and patient-centered tips for patient communication. Once the components of the toolkit were developed and vetted by focus groups and an external advisory committee, it was piloted with a small sample taken from six Oregon pharmacies under the same large grocery chain. Although our original intent was to evaluate the effect of RESPOND implementation on opioid dispensing patterns, data access barriers from the pharmacy curtailed our ability to execute this Aim. However, we later incorporated feedback from the initial pilot to evaluate the effect of RESPOND on self-reported outcomes in a larger study of community pharmacies in Oregon.

The RESPOND Toolkit was developed based on focus group and external advisor feedback and refined using two phases of pilot testing with multiple waves of post-phase feedback from community pharmacists.

### *Focus Groups*

Focus groups were conducted in person with patients (N=3 groups; 4-8 participants per group; M<sub>age</sub>=60.1; 71% female) and online with community pharmacists (N=2 groups; 7-12 participants per group; M<sub>age</sub>=39.0; 58% female) and prescribers (N=1 group; 8 participants; M<sub>age</sub>=47.9; 75% female) using Qualboard™ through *20/20 Research*. All focus group participants were reimbursed \$100 for their

time. Details from focus group investigation are described here: Hartung DM, Hall J, Haverly SN, Cameron D, Alley L, Hildebran C, O'Kane N, Cohen D. Pharmacists' Role in Opioid Safety: A Focus Group Investigation. *Pain Med.* 2018 Sep 1;19(9):1799-1806.

#### *External Advisory Committee*

Simultaneous with focus group recruitment and execution, an external advisory committee (EAC) was formed to provide high-level insight into lesson planning, community pharmacy culture, and current state and national initiatives that could affect development and dissemination of the RESPOND Toolkit. The EAC was composed of representatives from a patient safety organization, state and local public health departments, the board of pharmacy, practicing pharmacists, and physicians with experience around pain, emergency medicine, and addiction. Focus group scripts, online course lesson plans and learning objectives, video scripts, and toolkit materials were sent to the EAC for review. Participation in the EAC was voluntary, and members were not compensated for their time.

#### *Course Development*

The online continuing education course for RESPOND was developed in collaboration with the Professional and Continuing Education Department at Oregon State University. Building upon information gleaned from focus group participants and EAC feedback, a course curriculum, learning objectives, course slides, and narration scripts were developed by the research team. The resulting asynchronous online program (0.2 CEUs) serves as the backbone of the RESPOND Toolkit and contains three distinct modules requiring approximately 20 minutes each.

The first module focuses on providing history and context for the opioid epidemic in the United States and current public health initiatives. The second focuses specifically on PDMPs: their history, effectiveness, usability, and “best practice” recommendations toward greater efficiency and effectiveness. The third module is aimed at communication between pharmacists, prescribers, and patients; it addresses interaction strategies in terms of order of operations, recommendations for information gathering and sharing, modes of communicating, as well as MI-inspired communication techniques to use with patients at the point of care. Relevant quotes from pharmacists and patients who participated in the focus groups are provided throughout the second and third modules, to provide a relatable voice to the training and enhance engagement and participation.

The third module also includes a 16-minute training video, written and produced by the research team, using common difficult scenarios to illustrate the benefits of using MI strategies to de-escalate a challenging conversation on opioid safety, collect subjective information from the patient, and build in time to communicate recommendations and concerns with their prescribing provider.

#### *Materials Development*

To accompany the RESPOND Toolkit's online course, printed materials were also created to be displayed as resources within community pharmacies. These include a printed, laminated algorithm to aid pharmacists in their decision-making process for when and why to screen opioid prescriptions with the PDMP and how best to address patients with pain in typical and/or difficult situations. The order of operations outlined in the algorithm was informed directly from focus group feedback outlining workflows and usual care practices commonly employed by community pharmacists. For instance, most pharmacist participants indicated that they use their in-house dispensing systems to perform initial patient and prescription review, so “Conduct Prescription Drug Utilization Review (DUR)” is listed as the first step in the RESPOND process. However, there was a great deal of ambivalence and/or lack of training for community pharmacists regarding when to access PDMP data, (e.g., many queried the PDMP solely to investigate potential diversion), so the research team determined a “best practices” approach, outlining

the specific information only attainable through the PDMP and what triggers should lead a pharmacist to conduct a thorough review. Communication strategies outlined at the base of the algorithm are reflective of those outlined in the third module of the online training and derived primarily from the principles of MI.

Finally, a checklist was created to be stationed at pharmacists' computer monitors or beside their phones. Whereas the algorithm focuses mainly on protocol and communication about patient care, the checklist is aimed at facilitating effective correspondence with prescribers. The SOAP Note Strategy, a common protocol taught to prescribers and pharmacists as part of their career training, was used to outline a step-by-step process by which pharmacists can gather relevant subjective and objective information, communicate that information back to the prescriber or medical staff efficiently and effectively, and create a plan for patient care that includes all relevant parties.

#### *Initial Pilot Test*

The RESPOND Toolkit was first piloted in six community pharmacies within one large grocery chain in two 6-month phases, with the period between phases used to revise and refine toolkit materials. Each phase consisted of a baseline and 6-month follow-up survey (see appendix for items) – approximately 15 minutes in length – to capture the outcomes of interest for the intervention: Attitudes toward Opioid Use Disorder (OUD), Practice Self-efficacy, Service Barriers, PDMP Safety Attitudes, PDMP General Attitudes, and Perceived Behavioral Control to Address Opioid Use Disorder (OUD). To the extent possible, previously published and reliable measures were used in the pilot survey. Each of these measures employed a Likert-style response scale indicating 'Strong Agreement' to 'Strong Disagreement.' Changes in opioid safety, PDMP use, and communication knowledge were captured in the online course.

*Recruitment.* The research team worked closely with the pilot pharmacy partners to identify six stores most appropriate for intervention piloting based on overall prescription fill rates, community need, and location. Two urban and one rural location were chosen for each wave, and site criteria review ensured that the pharmacy characteristics were roughly similar between phases. Each site had three staff pharmacists and one pharmacy manager. Pharmacy managers were only included in Phase 2 recruitment, making a total available sample size of 21 potential participants.

*Post-intervention Semi-structured Interviews.* Immediately following the 6-month intervention period for both Phase I and Phase II, feedback about the RESPOND online course, printed algorithm, and checklist were collected from participants via semi-structured telephone interviews. Recommendations for improvement were also solicited. Intervention participants who participated in the post-intervention interview received a \$100 incentive in the form of a check or online gift card (their choice).

#### *Second Pilot Test*

After completion of the initial pilot phase, several changes were made to the toolkit based on feedback from participants. First, the SOAP note checklist and communication algorithm developed in tandem with the modules were streamlined and redesigned to be ready for dissemination to the public. Second, some of the learning management system features were streamlined and made more accessible to participants, such as by altering the module instructions and embedding the surveys into the learning management system itself, rather than administering it through REDCap. Third, the modules themselves were made less wordy and were redesigned to be public facing, with enhanced visuals and a fresh, uniform design.

*Recruitment.* Once these changes were made to the toolkit, recruitment for the second pilot test began. A recruitment email was sent to more than 1,000 Oregon-licensed pharmacists

contacted through two listservs acquired from the Oregon Board of Pharmacy and the Oregon State University/Oregon Health & Science University College of Pharmacy. The email contained an overview of the study and a link to consent to participate and register with the online learning management system (LMS). Participants were asked to complete a pre-intervention survey (see appendix for items), three online modules, and the post-intervention survey (see appendix for items). Each module also contained an optional pre/post quiz to assess knowledge gains. Participation was incentivized through a \$25 Amazon gift card for completing the pre-intervention survey and another \$50 for completing the post-intervention survey. Participants were given 6 weeks to complete the activities, and then access to the LMS was closed. All activities for the RESPOND study, including this pilot, were reviewed and approved by the Oregon Health & Science University Institutional Review Board.

*Post-Intervention Changes.* After the second pilot test was complete, the research team made additional changes to the toolkit to get it ready for the public based on participant feedback. First, the third module had its 16-minute long educational video cut down into three smaller more manageable videos, and additional slides were added to address key points in these smaller videos. Second, approval was given by Oregon State University to offer continuing medical education credits for each module in the toolkit. Future hosting of the toolkit will take place on Comagine's learning management system and Oregon State University's educational portal.

## Results (Final Pilot)

### *Survey Outcomes*

Participation in the RESPOND training showed a positive impact in most domains assessed through the survey instrument (Table 1). Respondents reported moderate improvements in perceived service barriers (e.g., lack of training, resources, or knowledge to identify and refer patient who may be misusing prescription opioids;  $T_1=3.19$ ,  $T_2=2.76$ ; Cohen's  $d=0.69$ ;  $p<0.001$ ) and perceived behavioral control to address OUD ( $T_1=3.39$ ,  $T_2=3.64$ ; Cohen's  $d=0.54$ ;  $p<0.001$ ). Small, but statistically significant, improvements were reported with respect to attitudes about the pharmacists' role toward OUD ( $T_1=3.72$ ,  $T_2=3.89$ ; Cohen's  $d=0.34$ ;  $p=0.001$ ), general attitudes about the PDMP ( $T_1=6.04$ ,  $T_2=6.19$ ; Cohen's  $d=0.19$ ;  $p<0.05$ ), and the PDMP's role in assessing opioid safety ( $T_1=5.92$ ,  $T_2=6.21$ ; Cohen's  $d=0.39$ ;  $p<0.001$ ). Respondents also reported small improvements practice self-efficacy to address opioid misuse ( $T_1=3.59$ ,  $T_2=3.77$ ; Cohen's  $d=0.35$ ;  $p<0.001$ ).

Single item measures are shown in Table 2. Following completion of the educational modules, participants were more likely to agree or strongly agree that using the PDMP was easy (81% vs 70%;  $p=0.03$ ). However, other single-item questions related to PDMP support, resources, perceived behavioral control, and knowledge remained unchanged following completion of the modules.

### *Knowledge Assessments*

Of the 131 pharmacists in this sample, 120 (91.6%) completed the optional pre/post knowledge assessment quiz questions. Comparisons of pre/post scores from the training program revealed the greatest percent change improvement from Module 3: Communicating with Patients and Prescribers ( $n=128$ ; pre=5.91, post=7.23, +22.34%). There were also improvements for Module 1: Anatomy of an Epidemic ( $n=128$ ; pre=9.07, post=9.32, +2.76%) and Module 2: Understanding PDMPs ( $n=134$ ; pre=6.18, post=6.38, +3.24%). For Module 1, nearly all participants scored the full 10 points at the pre-test, indicating a ceiling effect. When taken in aggregate, there was a significant moderate impact of the RESPOND training program on objective knowledge improvement (pre= $7.05\pm 1.10$ , post= $7.62\pm 1.00$ ; Cohen's  $d=0.55$ ;  $p<0.001$ ).

## Discussion

The second pilot test demonstrated that the RESPOND Toolkit was effective at significantly improving perceived behavioral control and changing attitudes toward OUD, perceived barriers to address prescription opioid misuse, and PDMP attitudes. As in the original pilot, a significant, moderate effect was observed for objective knowledge gains across the modules in the final pilot.

Although the survey data demonstrated improvements on most outcomes, significant improvement was not found for perceived behavioral control and work culture toward the use of PDMPs. Unlike many other states, Oregon does not require pharmacists to check the PDMP prior to dispensing controlled substances.<sup>13</sup> As a result, compared with pharmacists practicing in states where this is required, Oregon pharmacists may be less familiar in how to use Oregon's PDMP and thus information specific to Oregon's PDMP may be necessary to shift perceptions on integrating this tool into the community pharmacy workflow. Because the information provided in the RESPOND training is not tailored to any specific state, it is possible that pharmacists practicing in other states may benefit more or less from this module depending on state requirements.

Pharmacists have an ethical and legal responsibility to promote safe opioid use.<sup>14</sup> Expectations surrounding the role for pharmacy practice in the current opioid climate remain poorly defined. As a result, it is prudent that pharmacists develop the knowledge and skills necessary to address concerning circumstances involving opioids. PDMPs are an important but frequently underutilized tool to improve opioid safety. In many ways, barriers to increasing pharmacist use of PDMPs mirror the challenges for offering and dispensing naloxone: fear of offending patients, concerns about interfering in patient care, lack of confidence, limited knowledge or training, and time/space constraints. Many of these barriers contribute to suboptimal patient counseling and overall communication.

Despite this, communication strategies have not been a major component of naloxone training program for pharmacists.<sup>15</sup> In a review of 12 online continuing education programs focused on naloxone, in states with pharmacist standing orders, most had limited content on communication strategies.<sup>15</sup> This gap in training on opioid safety communication is consistent with our findings, as pharmacists saw the greatest gains from Module 3: Communicating with Patients and Prescribers, which provided strategies for communicating with the SOAP note model (for prescribers) and motivational interviewing (for patients). The communication training is arguably the most novel aspect of the RESPOND Toolkit, aligning with recent literature calling for a forward focus on providing communication support to pharmacists to help mitigate patients' medication and pain treatment concerns.<sup>13, 16, 17</sup> As the role for pharmacists in the opioid crisis expands, it is increasingly recognized that the pharmacists' responsibility is more multifaceted than simply dispensing, or, conversely, refusing to dispense an opioid prescription. Effectively addressing the opioid crisis will require a shift to more complex conversations involving opioid safety and subsequently connecting patients with appropriate resources. As a result, there is a critical need for educational programs and resources that foster harm reduction services in community pharmacies such as naloxone, syringe exchange and disposal, and fentanyl testing strips. RESPOND provides a platform that can be easily adapted to address both current and future needs.

### *Limitations*

Several limitations of this research should be noted. First, this study only included Oregon-licensed pharmacists, so results may not be generalizable to pharmacists practicing in other states, particularly those in states with PDMP checking requirements or other mandates. Second, although participants were recruited from a comprehensive list of Oregon-licensed pharmacists, it is unknown if pharmacists who completed the study were different than those who elected not to participate. Third, a few of the

composite scales had poorer reliability than expected, with some of the scales falling below a Cronbach's alpha of 0.60. Though these scales have appeared in published material in the past, future research in community pharmacy should strive to develop more consistent and validated measures.

## Conclusion

During development of the RESPOND Toolkit, findings suggested positive changes in opioid safety attitudes, self-efficacy, and knowledge.<sup>18</sup> However, the study's small sample size and scope limited our ability to fully assess outcomes and examine the generalizability of the toolkit. This study allowed us to expand our previous sample from 16 pharmacists under one pharmacy chain to 188 pharmacists in Oregon working across various settings. The consistency in effect size and statistically significant findings is encouraging for potential scalability and generalizability.

We conclude that the RESPOND Toolkit is an effective and scalable training resource for community pharmacists, with the potential to promote behavioral shifts that support opioid safety for patients. Results demonstrate improved attitudes, knowledge, and perceived behavioral control. Future work on the RESPOND Toolkit should focus on the measurement of objective behavior outcomes, including pharmacists' dispensing behaviors and the frequency and quality of pharmacist-patient engagement around opioid safety.

## List of Publications and Products

- Comagine. RESPOND. <https://pharmacistrespond.org/>. Accessed October 9, 2019.
- Hartung DM, Hall J, Haverly SN, Cameron D, Alley L, Hildebran C, O'Kane N, Cohen D. Pharmacists' Role in Opioid Safety: A Focus Group Investigation. *Pain Med*. 2018 Sep 1;19(9):1799-1806
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- Alley L, Novak K, Havlin T, Irwin A, Carson J, Johnston K, O'Kane N, Hartung DM. RESPOND: Development and pilot of a prescription drug monitoring program and communication intervention for pharmacists. *Res Soc Adm Pharm*. (*Revise and resubmit*)
- Irwin, A, Novak K, Alley L, Havlin T, O'Kane N, Johnston K, Hildebran C, Carson J, Hartung DM. Changing community pharmacists' opioid safety attitudes, self-efficacy, and knowledge with the RESPOND toolkit. *Journal of the Am Pharm Assoc*. (*Revise and resubmit*).



**Appendix A:** Survey Questions for Composite Endpoints for Pharmacists' Attitudes and Level of Self-Efficacy towards Prescription Drug Monitoring Programs (PDMPs) and Opioid Use Disorder (OUD)

Measure (citation if available)	Question Stem	Response Options
Attitude towards OUD <sup>11</sup>	1. Opioid abuse is a problem in my community practice setting.	1 = Strongly disagree
	2. Improving prescriber-pharmacist communication would deter opioid abuse.	2 = Disagree 3 = Neither agree nor disagree
	3. Improving prescriber-patient communication would deter opioid abuse.	4 = Agree 5 = Strongly agree
	4. Overall, prescribers are more responsible than pharmacists for opioid abuse issues.	
	5. Improving pharmacist-patient communication would deter opioid abuse.	
Practice Self-efficacy to Address Opioid Misuse <sup>19</sup>	1. I feel I have a working knowledge of prescription opioid misuse.	1 = Strongly disagree
	2. I feel I have a clear idea of my responsibilities in helping patients who misuse prescription opioids.	2 = Disagree 3 = Neither agree nor disagree
	3. I feel I have the right to ask patients about their use of prescription opioids.	4 = Agree 5 = Strongly agree
	4. I feel awkward asking patients about their possible misuse of prescription opioids.	
Perceived Barriers to Service <sup>19</sup>	1. I possess too little training in helping patients who misuse prescription opioids.	1 = Strongly disagree 2 = Disagree
	2. I have insufficient access to screening tools to assess prescription opioid misuse.	3 = Neither agree nor disagree 4 = Agree
	3. I know too little about how to identify patients who misuse prescription opioids when they do not have obvious symptoms of excess opioid use.	5 = Strongly agree
	4. I have too few self-help or educational pamphlets available.	
	5. I know too little about where to refer patients for help.	
	6. I have insufficient training to screen opioid prescriptions for potential patient safety issues.	

Measure (citation if available)	Question Stem	Response Options
Safety Attitude toward the PDMP <sup>9</sup>	When the safety of an opioid prescription is in question, use of the PDMP is...	Sliding Scale = -3 to +3
	1. Good or Bad	
	2. Inconvenient or Convenient	
	3. Harmful or Beneficial	
	4. Worthless or Valuable	
General Attitude toward the PDMP	In general, using the PDMP is...	Sliding Scale = -3 to +3
	1. Good or Bad	Sliding Scale = -3 to +3
	2. Inconvenient or Convenient	Sliding Scale = -3 to +3
	3. Harmful or Beneficial	Sliding Scale = -3 to +3
	4. Worthless or Valuable	Sliding Scale = -3 to +3
Perceived Behavioral Control to Address OUD <sup>11</sup>	1. I am confident in my ability to detect patient opioid abuse issues in my practice setting.	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree
	2. I am confident in my ability to counsel patients regarding perceived opioid addiction-related issues.	
	3. I am confident in my ability to discuss treatment facility options with potential opioid abusers.	
	4. I feel comfortable questioning prescribers regarding the legitimacy of opioid prescriptions.	
	5. I fear that I may damage prescriber-pharmacist relationships if I question opioid prescribing behaviors.	
	6. I fear that I may face disciplinary action from my employer if I question the legitimacy of an opioid prescription.	

## Appendix B: Knowledge Assessment Questions Delivered Pre/Post Module Completion

### Module 1: Anatomy of an Epidemic:

1. The opioid overdose epidemic is largely attributable to...
  - a. The development of more potent opioids
  - b. An increased incidence of pain-related disorders
  - c. Shortages in non-opioid-related pain medications
  - d. **Large increases in opioid prescribing**
  
2. Opioid use affects what parts of the body?
  - a. Brain receptors and reward regions
  - b. Peripheral GI motility
  - c. Peripheral respiratory drive
  - d. **All of the above**
  
3. All opioids taken chronically produce physiological dependence that induces...
  - a. Tolerance
  - b. Withdrawal
  - c. **Both tolerance and withdrawal**
  - d. None of the above
  
4. Which of the following are risk factors for opioid overdose?
  - a. Taking a high dose of opioid medication
  - b. Taking long-acting opioid formulation
  - c. Co-prescription with a benzodiazepine
  - d. Disordered breathing while sleeping, e.g., sleep apnea
  - e. **All of the above**
  
5. Corresponding Responsibility states that...
  - a. **The responsibility for proper prescribing and dispensing of controlled substances is upon the prescribing practitioner, and the pharmacist has a corresponding responsibility to ensure proper prescribing and dispensing**
  - b. Deliberately ignoring a questionable prescription can be prosecuted for civil offense
  - c. The responsibility for proper prescribing is upon the prescribing practitioner, and the responsibility for proper dispensing is upon the pharmacist
  - d. It is the pharmacists' responsibility to screen patient medical histories for the prescribing practitioner, who has the right to ignore that information

### Module 2: Understanding Prescription Drug Monitoring Programs (PDMPs):

1. Which of the following is NOT considered a potential safety trigger to check the PDMP?
  - a. The patient is new to the pharmacy
  - b. The prescription requests an opioid dose that is significantly higher than the patient's previous fill

- c. The prescription includes an opioid, a benzodiazepine, and/or a muscle relaxant
  - d. **The patient is wearing sunglasses in the pharmacy**
  - e. All are potential safety triggers
2. A PDMP delegate...
- a. Can help address barriers to PDMP use
  - b. Is authorized to access the PDMP based on state laws
  - c. Acts on behalf of a pharmacist or other healthcare provider
  - d. **All of the above**
3. Choose the true statement(s):
- a. PDMP laws are similar across the US
  - b. New York triplicate prescription policies increased the rate of benzodiazepine use
  - c. Early Prescription Drug Monitoring Programs (PDMP) were implemented in the US in the 1970s
  - d. **Most US states and territories do not require PDMP registration for pharmacists or prescribers**
  - e. None of the above
4. Choose the true statement(s):
- a. The national landscape is constantly evolving
  - b. Functionalities of PDMPs has declined with increased use
  - c. Proactive reporting of PDMP data has expanded in some states
  - d. **A and C only**
  - e. All of the above
5. Choose the true statement(s):
- a. Studies report that most providers are aware of PDMP status in their state
  - b. PDMP systems are improving data timeliness
  - c. PDMP data can be integrated into Electronic Health Records (EHR)
  - d. A and B only
  - e. **All of the above**

### Module 3: Communicating with Prescribers and Patients:

1. For which of the following reasons should you contact a patient's prescriber?
- a. The prescription itself is determined to be high risk
  - b. The patient is wearing sunglasses and/or hooded sweatshirt in the pharmacy
  - c. The PDMP reveals troubling prescription or provider patterns
  - d. Something just feels "off"
  - e. **A and C only**
  - f. A, B, and C only
2. Which of the following is NOT a component of the SOAP Note Strategy?
- a. Subjective information verbally or visually provided by patient or prescription

- b. Objective information gathered from the PDMP, DUR, and other sources
  - c. **Assessment of the individual's demeanor and circumstances**
  - d. Plan or recommendation for next steps
  - e. All of these are components of SOAP
3. Choose the true statement(s) regarding effective pharmacy process:
- a. Provide further review for controlled substance prescriptions written outside the area
  - b. Include PDMP information in provider communications
  - c. Start conversations with the patient after decisions have been made
  - d. **A and B only**
  - e. All of the above
4. Which of the following is NOT a recommended strategy for de-escalating tense conversations with patients?
- a. Asking permission before giving information or advice
  - b. Reflecting patients' responses back to them for clarification
  - c. Asking open-ended questions to facilitate trust and learn more about their situation
  - d. **Giving unsolicited information and advice to help the patient better understand their risks**
  - e. All of these are recommended strategies
5. Which of the following is an example of a supportive open-ended question you can use with a patient?
- a. Do you always take your medications as directed?
  - b. I see you've visited multiple prescribers over the past few months. Would you consider yourself a doctor shopper?
  - c. **What are some of the concerns you have about taking pain medications?**
  - d. Did you know there are a lot of risks associated with taking the pain medication you're on?
  - e. C and D are examples

**Table 1:** Survey Outcomes for Attitudes and Level of Self-Efficacy toward PDMP Utilization and OUD treatment

Measure	M	SD	t value	df	Sig (two-tailed)	Cohen's <i>d</i> <sub>pooled</sub>	$\alpha$
Attitude toward OUD – T1	3.72	0.51	3.57	110	0.001	0.34	.56
Attitude toward OUD – T2	3.89	0.45					.59
Practice Self-Efficacy – T1	3.59	0.55	3.80	119	<0.001	0.35	.60
Practice Self-Efficacy – T2	3.77	0.49					.63
Perceived Service Barriers – T1	3.19	0.68	-7.36	112	<0.001	0.69	.77
Perceived Service Barriers – T2	2.76	0.62					.77
PDMP Safety Attitude – T1	5.92	1.01	4.29	120	<0.001	0.39	.84
PDMP Safety Attitude – T2	6.21	0.74					.79
PDMP General Attitude – T1	6.04	0.98	2.032	119	<0.05	.19	.85
PDMP General Attitude – T2	6.19	0.82					.85
Perceived Behavioral Control to address OUD – T1	3.39	0.53	5.86	117	<0.001	0.54	.62
Perceived Behavioral Control to address OUD – T2	3.64	0.45					.50

OUD – opioid use disorder; PDMP – prescription drug monitoring program; T1 - pre-intervention survey; T2 - post-intervention survey

**Table 2:** Survey Outcomes for Single Item Questions on PDMP Knowledge, Perceived Behavioral Control to Use the PDMP, and Work Culture Around PDMP Use

Survey Item	T1 Counts (%)	T2 Counts (%)	$\chi^2$ value	Sig (two-tailed)	Cramer's V
<b>How would you rate your current knowledge of the PDMP?</b>	<i>n</i> =128	<i>n</i> =125	3.676	0.159	0.12
Knowledgeable	92 (71.9)	102 (81.6)			
Somewhat Knowledgeable	24 (18.8)	17 (13.6)			
Not Knowledgeable	12 (9.4)	6 (4.8)			
<b>I am confident that I can effectively use the PDMP to monitor unsafe opioid prescriptions.</b>	<i>n</i> =128	<i>n</i> =124	5.24	0.07	0.14
Agree or Strongly Agree	104 (81.2)	111 (89.5)			
Neutral	15 (11.7)	11 (8.9)			
Disagree or Strongly Disagree	9 (7.0)	2 (1.6)			
<b>For me, utilizing the PDMP is _____.</b>	<i>n</i> =128	<i>n</i> =125	7.09	0.03	0.17
Easy	89 (69.5)	101 (80.8)			
Moderate	19 (14.8)	17 (13.6)			
Difficult	20 (15.6)	7 (5.6)			
<b>I feel I currently receive sufficient support at work to integrate the PDMP into my daily workflow.</b>	<i>n</i> =125	<i>n</i> =125	0.255	0.88	0.03
Agree or Strongly Agree	78 (62.4)	80 (64.0)			
Neutral	24 (19.2)	25 (20.0)			
Disagree or Strongly Disagree	23 (18.4)	20 (16.0)			
<b>I feel I currently have access to sufficient resources at work to integrate the PDMP into my daily workflow.</b>	<i>n</i> =124	<i>n</i> =124	0.63	0.73	0.05
Agree or Strongly Agree	82 (66.1)	86 (69.4)			
Neutral	25 (20.2)	25 (20.2)			
Disagree or Strongly Disagree	17 (13.7)	13 (10.5)			

PDMP – prescription drug monitoring program

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