UNIVERSITY of MARYLAND
SCHOOL OF MEDICINE

DIVISION OF OCCUPATIONAL AND
ENVIRONMENTAL MEDICINE
University Square Building
11 S. Paca Street, Suite 200
Baltimore, Maryland 21201
410-706-7464
410-706-4078 Fax

7/1/2019

Clifford S. Mitchell, MD, MPH
Director, Environmental Health Bureau
Maryland Department of Health
201 West Preston Street, Room 327
Baltimore, MD 21201-2301

Re: Evaluation of Online Training on Provider Use of the Maryland PDMP
Contract Number: M00B9400431
MOU Period April 8, 2019 through June 30, 2019

Dr. Mitchell:

Attached please find our summary report describing the completion of all required deliverables by the University of Maryland School of Medicine, Division of Occupational and Environmental Medicine during the MOU period. We look forward to continuing to collaborate with you and your colleagues in the Maryland Department of Health in the future.

Sincerely,

Marianne Cloeren, MD, MPH, FACOEM, FACP
Associate Professor
University of Maryland School of Medicine
Department of Medicine
Division of Occupational and Environmental Medicine

1. Deliverable 1: Additional Participant Recruitment

   UM/OEM developed and delivered multiple outreach messages to medical systems and medical societies in Maryland. Outreach messages were customized to leverage collegial relationships with potential champions. See Appendix A for an example of one such message.
   Efforts included:
   - Distribution to the members of the Maryland College of Occupational and Environmental Medicine
   - Distribution to the members of the Maryland State Medical Society via multiple e-mail blasts
   - Distribution to the medical staff of LifeBridge Health
   - Distribution to the medical staff of University of Maryland Medical System
   - Distribution to the medical staff of Hopkins Bayview
   - Requested distribution to the Maryland Society of Physical Medicine and Rehabilitation
   - Requested distribution to the Maryland Chapter of the American College of Physicians (Internal Medicine) – unfortunately there was insufficient lead time in the brief MOU period for this society's review and approval mechanism

   These efforts resulted in nearly 300 providers registering, of which 150 completed the module. Multiple reminder messages were sent to those who began but did not complete the module. Note that the inability to incentivize participation beyond free continuing medical education credits was a limitation in recruitment efforts.

2. Deliverable 2: Data Management

   UM/OEM arranged to purchase a data file from the iSpring Learning Management System site that housed the module and the participant data. Data management activities included:
   - Preparing a data request, with clarification about Likert scale response organization.
   - Organizing the data file to remove duplicates, separating complete responses from incomplete, and identifying participants indicating willingness to complete the follow-up survey.
   - Researching multiple missing Controlled Dangerous Substances (CDS) license numbers.
   - Deidentifying the data for analysis purposes.
   - Mapping the evaluation questions to the data report. Preparing a data request to the Maryland PDMP using CDS numbers. We did not receive the requested utilization data from the PDMP, therefore we were unable to include this information in our analysis.
   - Preparing a follow-up survey using Qualtrics, disseminating the invitation to complete the follow-up survey to willing participants, reminding non-completers. We modified the planned survey to try to capture before/after changes we had hoped the PDMP utilization data would answer, when it became clear that we would not receive this requested data in time for the final report (Appendix B).
   - Downloading follow-up survey responses.

3. Deliverable 3: Analysis of Data

   UM/OEM developed a set of questions to be answered by the data (Appendix C). We present the analysis in Appendix D.

4. Deliverable 4: Conclusions and Recommendations

At baseline, most participants agreed with the value of the PDMP in a variety of clinical situations. However, their reported behavior did not correspond with the value they placed on the PDMP. This project was not designed to exhaustively explore reasons prescribing providers do not routinely use the PDMP, but to try to determine whether this behavior can be influenced with training.

It was difficult to recruit as many participants as we wanted. We believe this relates to lack of significant incentive and competing demands for time. Nonetheless, with 150 having completed the module, this produced a large amount of data. For future training projects, we recommend consideration of financial incentives to boost participation.

This project demonstrated to the participants that there is value in the PDMP beyond the mandatory use before prescribing a controlled substance, by illustrating in fictional cases how data from the PDMP can significantly change the treatment plan. In each fictional case, the treatment plan changed for most respondents in response to the PDMP data provided.

We had hoped to measure actual behavioral change following the training by comparing the pattern of accessing the PDMP before and after taking the module among participants and comparing this to the pattern of non-participants. Unfortunately, we were unable to obtain the requested data from CRISP. We recommend that MDH follow up with CRISP to obtain this information and make these comparisons, as this project offers a very rare opportunity to measure the actual impact of education.

The follow-up survey offered some insight into changes post-training. Only 59 of 150 participants agreed to follow-up contact, and of these only 32 completed the follow-up survey, yielding a respectable 50% response rate. By self-report 20 of these 32 reported that they used the PDMP after the training as much as, or more than, they had planned to, and 12 reported using it less than they had planned to. Reasons included prescribing less opioids, practice factors and difficulties with the interface.

This project yielded much more data that could be analyzed with the support of biostatisticians, and we recommend further such analysis with the plan to submit the findings for publication. We have engaged the services of the University of Maryland Baltimore Institute for Clinical Translational Research for such support and look forward to collaborating with you to prepare a manuscript sharing the findings of this project.

Appendix A Example of a Recruitment Outreach Message

"This message is sent on behalf of Hopkins Bayview Internal Medicine alumna, Dr. Marianne Cloeren. She needs your help in getting more participation in this project and hopes you will register and forward this message on to others in your circle who treat patients in Maryland.

Dr. Cloeren is an Associate Professor of Medicine at University of Maryland School of Medicine. She is working with the Maryland Department of Health to study the impact of an online educational module (that she authored and created) on prescribing provider attitudes and behaviors related to the Maryland Prescription Drug Monitoring Program. The module is fun, case-based and offers free CME. As you know, there is a new mandate that prescribing providers consult the Maryland Prescription Drug Monitoring Program (PDMP) before prescribing controlled substances. But there are other clinical reasons for checking the PDMP. The PDMP can be a useful clinical tool too. Learn more about this important program and earn some of your state required opioid education credits!

Access the module here: Evaluation of Online Training on Provider Use of the Maryland PDMP. Note that this link takes you to a University of Maryland School of Medicine website that explains the project, and from there, if you want to participate, there is a link to an external learning management system platform where you will register.

Accreditation Statement:

The MedChi, The Maryland State Medical Society is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Designation Statement:

MedChi designates this enduring material for a maximum of .5 AMA PRA Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity."

Appendix B Post-Training Survey

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You recently completed a training module about the Maryland Prescription Drug Monitoring Program (PDMP) and agreed to us contacting you for a brief follow-up survey. This survey addresses your experiences since taking the module. It should take no more than three minutes to complete.

How often do you check/query the PDMP?

- ○ Several times a day
- ○ Several times per week
- ○ About once a week
- ○ A few times per month
- ○ About once a month
- ○ A few times per year or less

In which scenarios do you routinely check the PDMP?

Please choose all that apply.

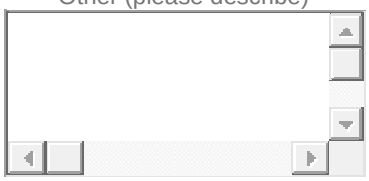
- ☐ For patients I suspect of aberrant drug behavior
- ☐ For new patients
- ☐ For patients to whom I prescribe a controlled substance for the first time
- ☐ For patients to whom I continue prescriptions for controlled substances
- ☐ For patients who are receiving controlled substances from other providers
- ☐ For current patients at least once
- ☐ I do not routinely check the PDMP

Which of the following most closely reflects your experience with the PDMP since taking the module?

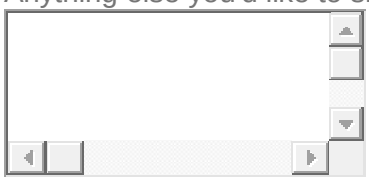
- ○ I have used the PDMP as much as I planned to.
- ○ I have used the PDMP more than I planned to.
- ○ I have used the PDMP less than I planned to.

If you used the PDMP less than you planned to, please indicate which, if any, of the following factors contributed. Please choose all that apply.

- ☐ Not applicable
- ☐ I made the decision to prescribe opioids less frequently than I thought I would.
- ☐ Checking the PDMP did not seem necessary in as many cases in which I prescribed opioids, than I anticipated.
- ☐ I found the PDMP too difficult to use.
- ☐ I found checking the PDMP too time-consuming.
- ☐ Other (please describe)



Anything else you'd like to share about your experience with the Maryland PDMP?



Appendix C Evaluation Questions – Responses for Analysis

1. How often do you prescribe opioids by years in practice?
2. Any difference in responses to question about in which scenarios they routinely check the PDMP by years in practice?
3. Response to have you registered with CRISP by how often they prescribe opioids
4. Response to have you ever checked the PDMP data by how often they prescribe opioids.
5. Response to how often do you check the PDMP by how often they prescribe opioids.
6. How about by whether they answered "yes" to treating any WC?
7. Response to how often do you check the PDMP in patients suspected of prescription drug abuse by:
   - Years in practice
   - Response to WC question
8. Response to how often do you check the PDMP in patients NOT suspected of prescription drug abuse by:
   - Years in practice
   - Response to WC question
9. Response to how often do you check the PDMP in patients before prescribing opioids for the first time by:
   - Years in practice
   - Response to WC question
10. Response to how often do you check the PDMP in patients before refilling opioids:
    Years in practice
    - Response to WC question
11. Plan for delegating checking the PDMP by:
    Years in practice
    - Response to WC question
    - How often they prescribe opioids
    - How often they check the PDMP
12. Case 1 Did management plan change analyzed by:
    - Years in practice
    - Response to WC question
    - How often they prescribe opioids
13. Case 2 Did management plan change analyzed by:
    - Years in practice
    - Response to WC question
    - How often they prescribe opioids
14. Case 3 Did management plan change analyzed by:
    - Years in practice
    - Response to WC question
    - How often they prescribe opioids
15. Response to which of these scenarios do you plan to use the PDMP by years in practice; response to WC question and how often they prescribe opioids (may need to tease out each scenario separately).
16. Plan to access the PDMP more by years in practice; response to WC question and how often they prescribe opioids.

Appendix D Analysis of Data

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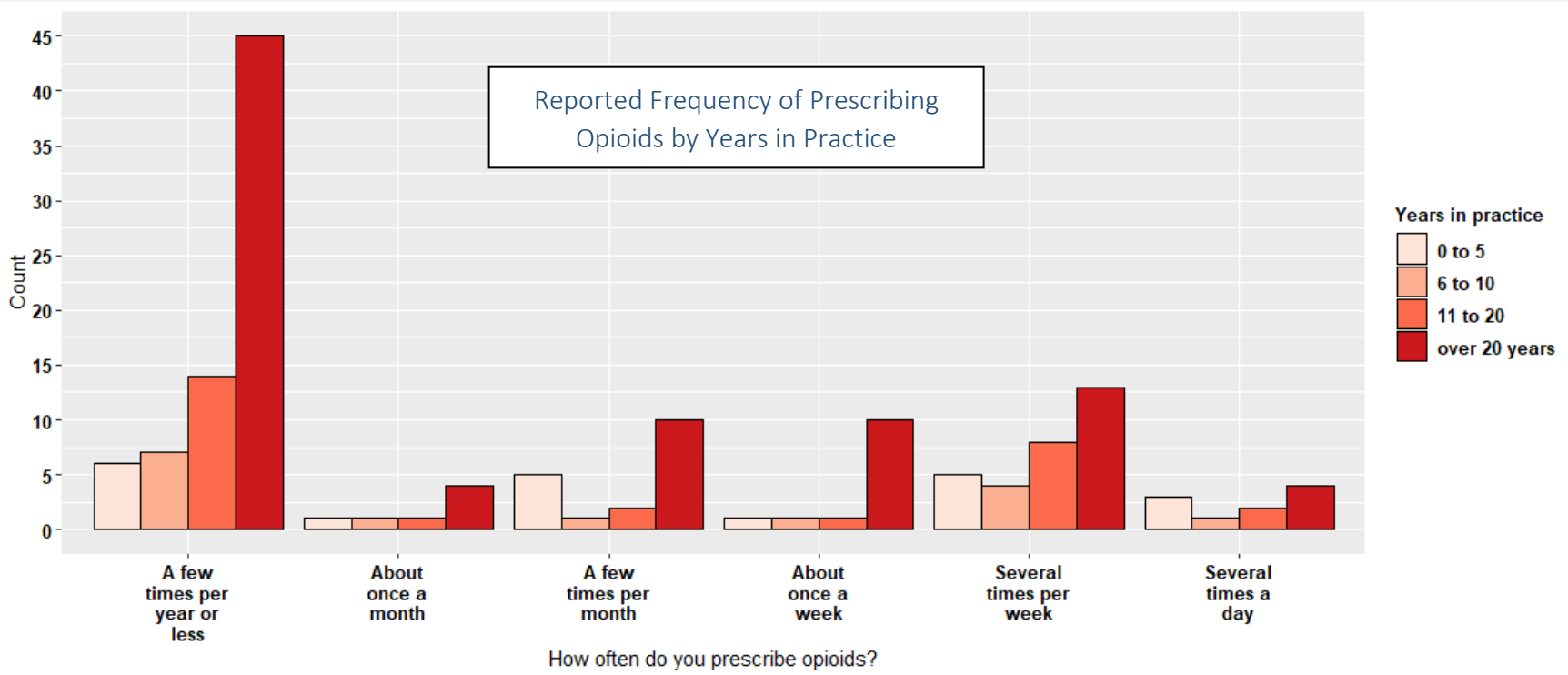
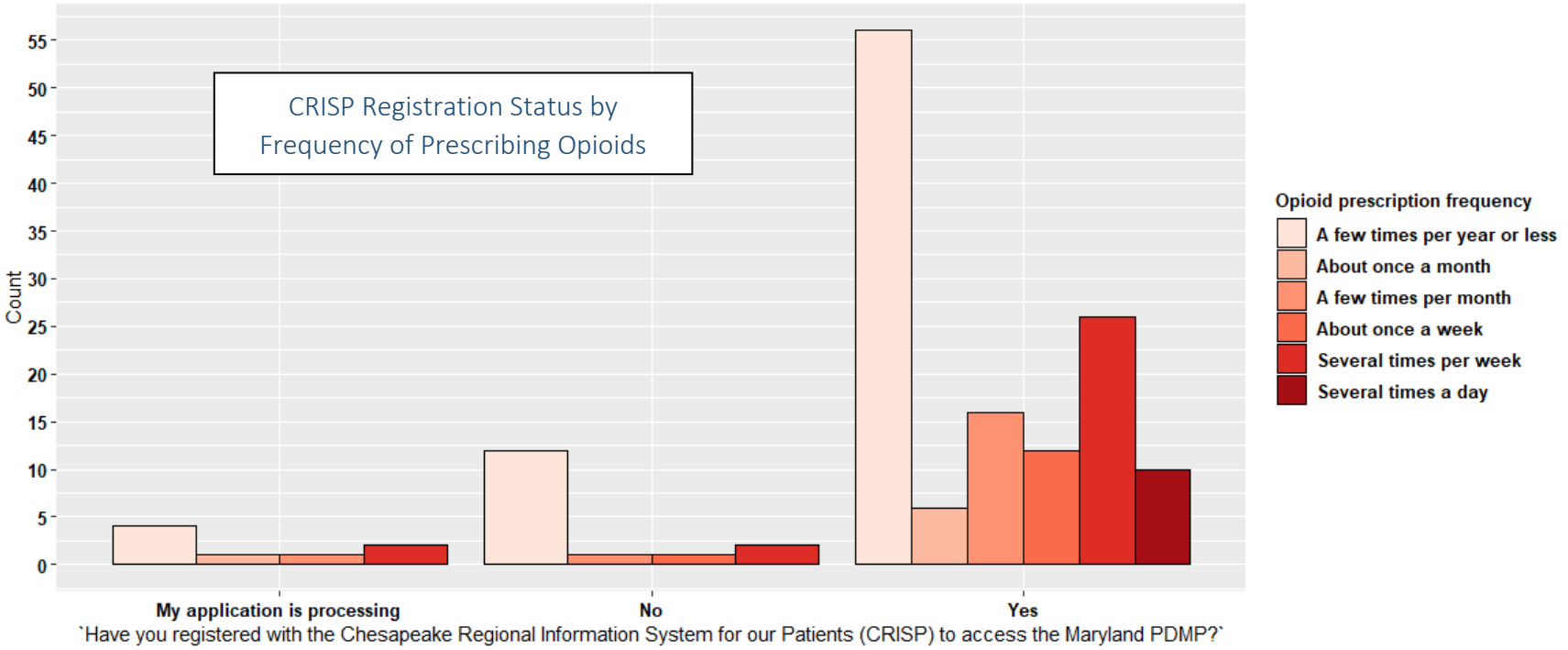
Reported Frequency of Prescribing Opioids

Most participants reported that they do not prescribe opioids frequently, a few times a year or less for all the periods of practice. There was no clear trend in frequency of prescribing based on years in practice. Providers who had been in practice 20 years or more were the most represented demographic in all the prescribing frequency categories.



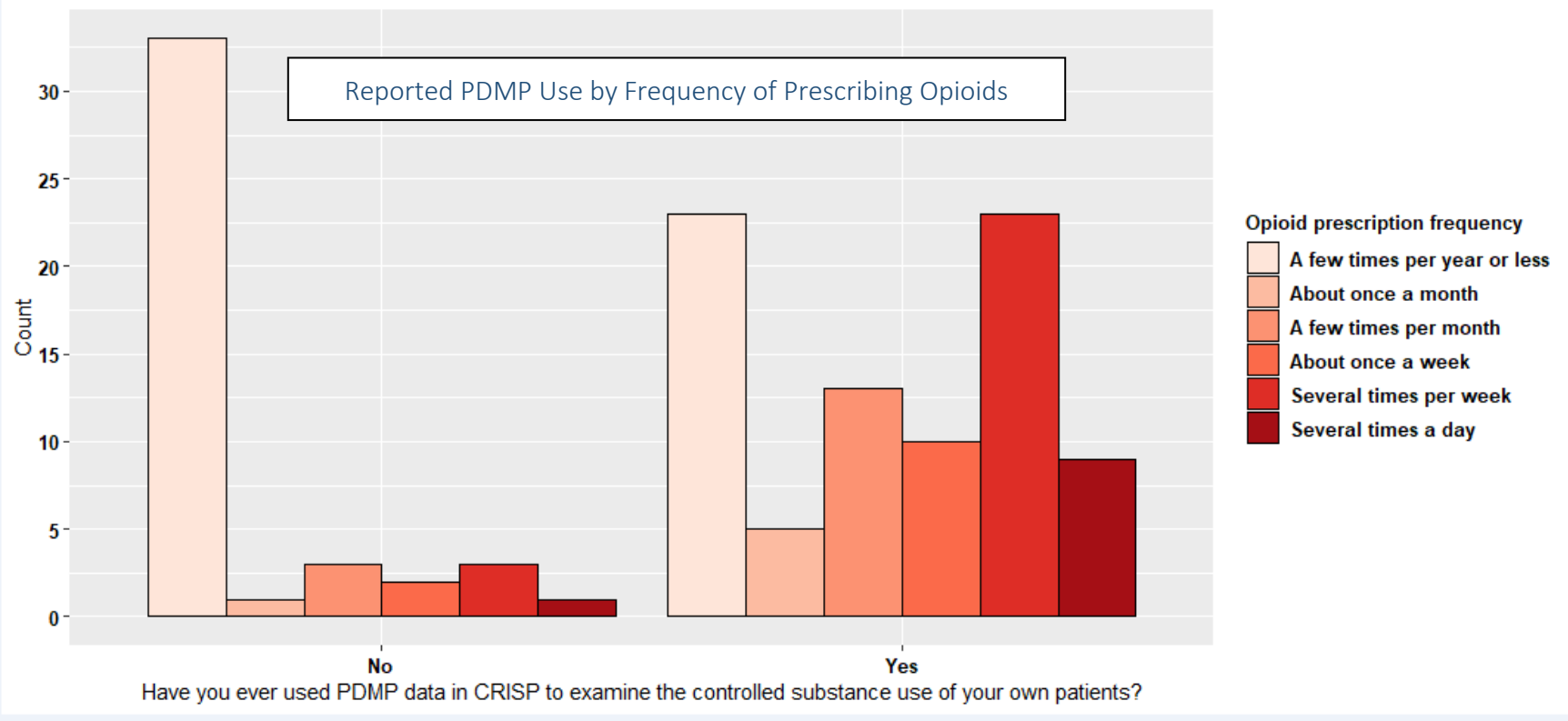
Reported PDMP Registration Status

Almost all respondents reported they had registered with the PDMP. Of those who said they had not registered, most were very infrequent or never prescribers of opioids. There were very few frequent prescribers who reported they had not yet registered with CRISP.



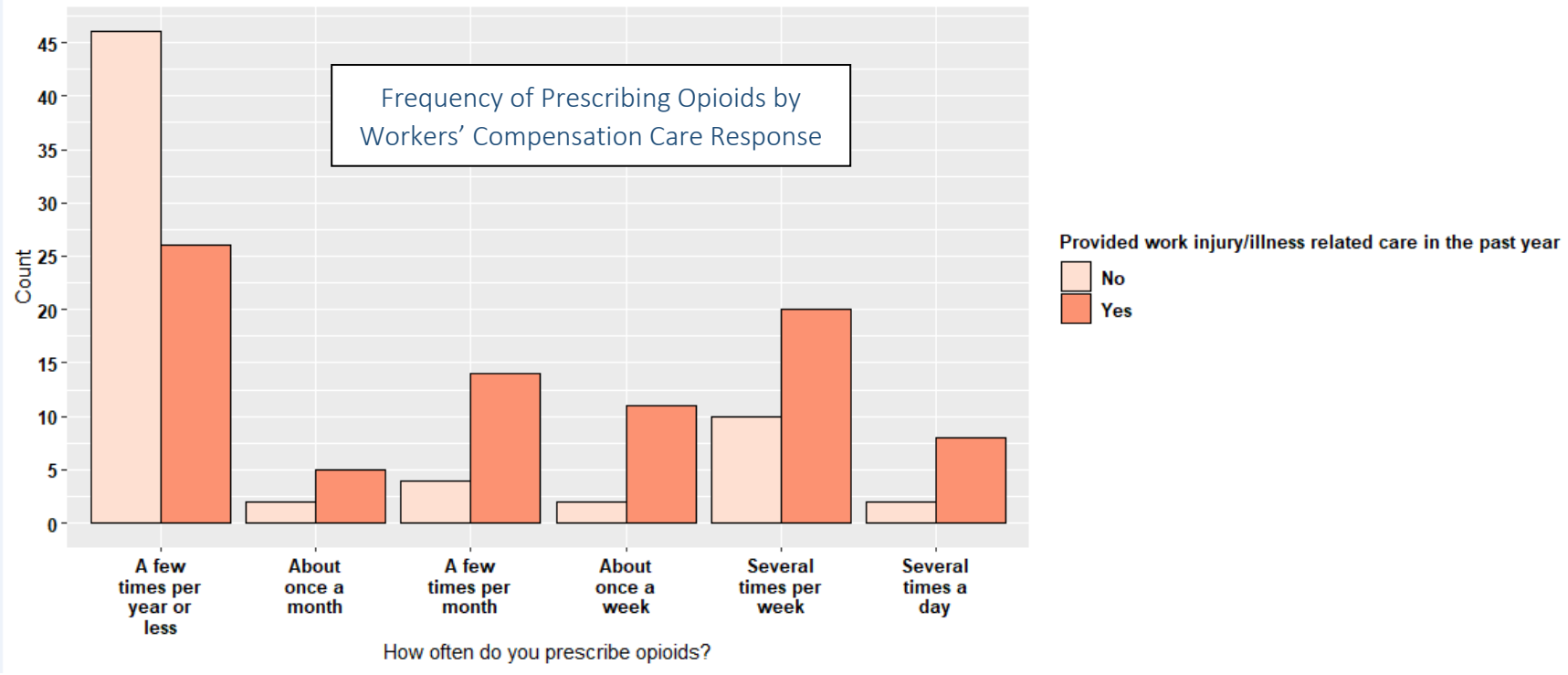
Reported Use of the PDMP Among Those Registered

Of the 126 respondents who said they had registered with the PDMP, 43 had not yet used the PDMP. Of these, six reported frequent opioid prescribing of once a week or more.

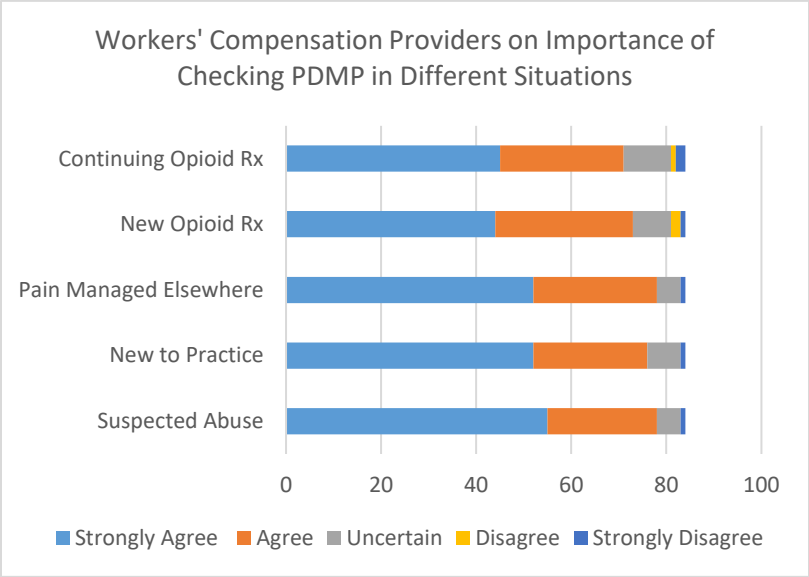


Responses of Workers' Compensation Providers

One of the goals of this project was to address opioid prescribing in workers' compensation practice. Eighty-four of 150 providers completing the training indicated that they had provided some workers' compensation care in the past year.

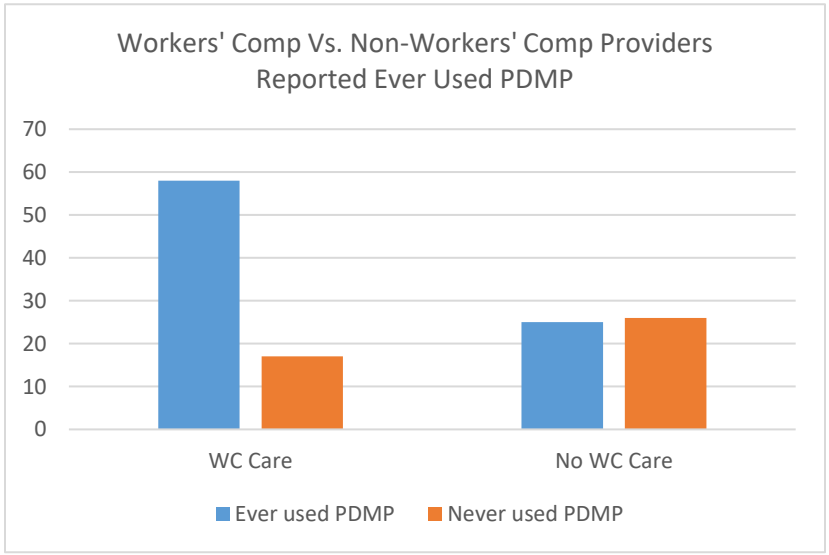


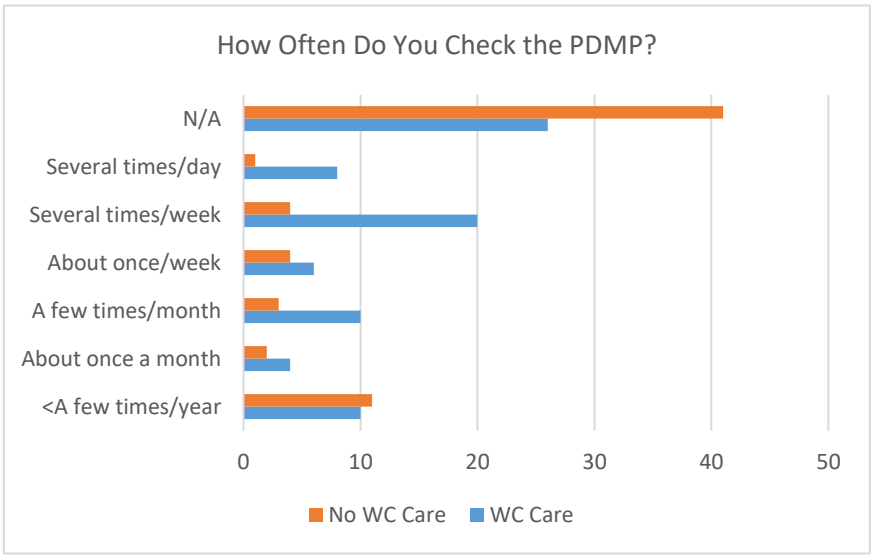
We analyzed the attitudes and reported practices of those who provided workers' compensation care separately from other participants in this training.



Most of the 84 participants who reported providing some workers' compensation related treatment in the previous year agreed with the importance of checking the PDMP in all the scenarios posed, with the most uncertainty situation of continuing opioid therapy for a patient.

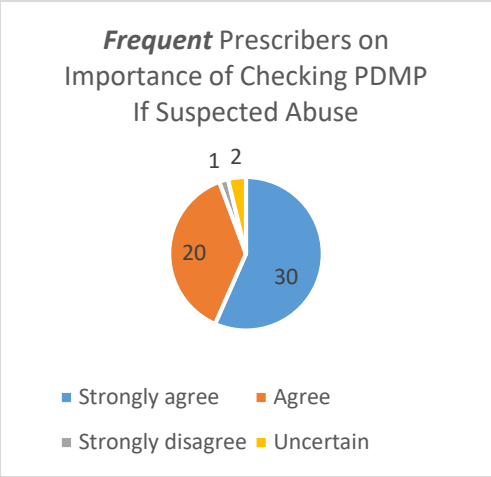
Participants who provided some workers compensation care in the previous year were more likely than those who did not, to have ever accessed the PDMP. They also reported accessing the PDMP more frequently than participants who had not provided any workers' compensation care.

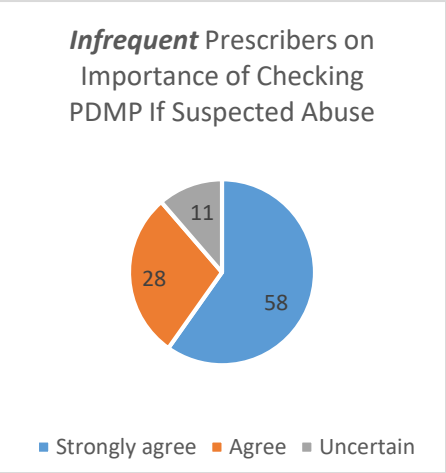




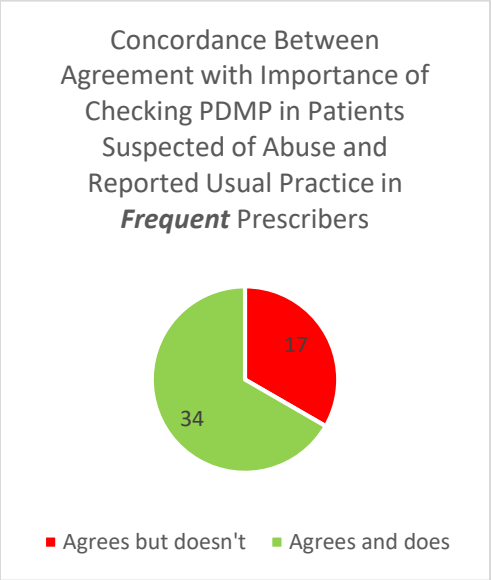
For the following analysis, we grouped the participants by frequency of reported prescribing. Those who reported prescribing opioids about once a week, several times a week, or several times per day were categorized as “Frequent Prescribers”. Those who reported prescribing opioids a few times per month or less were considered “Infrequent Prescribers”. There was very little difference in attitude between these two categories for any of the five presented scenarios for checking (suspected abuse, new patient, patient treated elsewhere for pain, new opioid prescription, continued opioid prescription). The infrequent prescribers expressed more uncertainty. There were a couple of frequent prescribers who were consistent in their disagreement with the need for the PDMP in any of the situations presented.

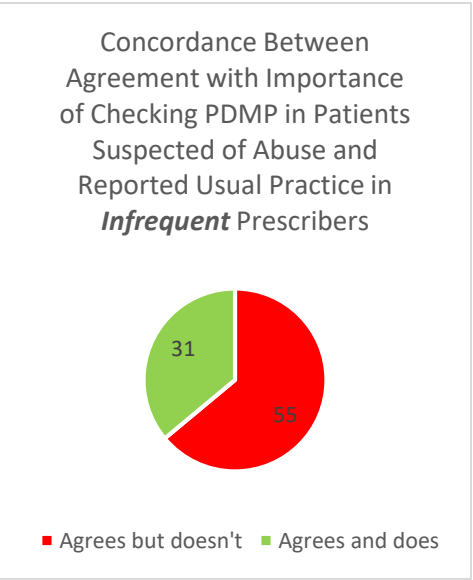
Checking PDMP for Patients Suspected of Abuse: Attitudes and Reported Practice





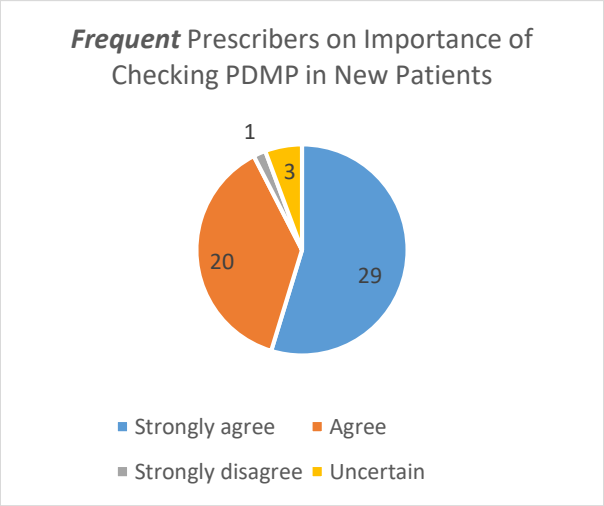
Of the 53 frequent prescribers, there was almost universal agreement that it is important to check the PDMP when they suspect abuse in a patient. The 98 infrequent prescribers answered similarly. That was an easy scenario.

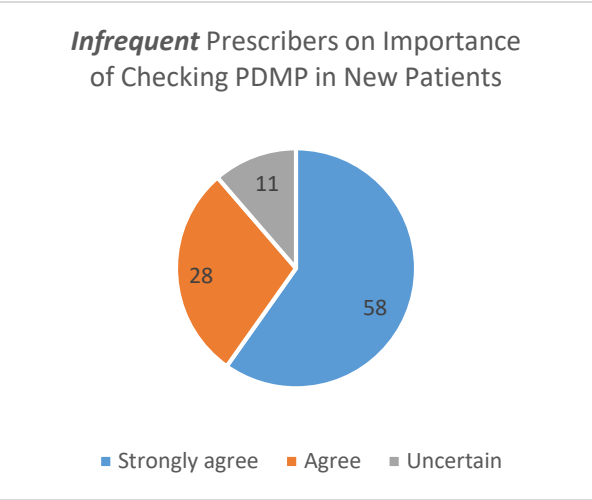




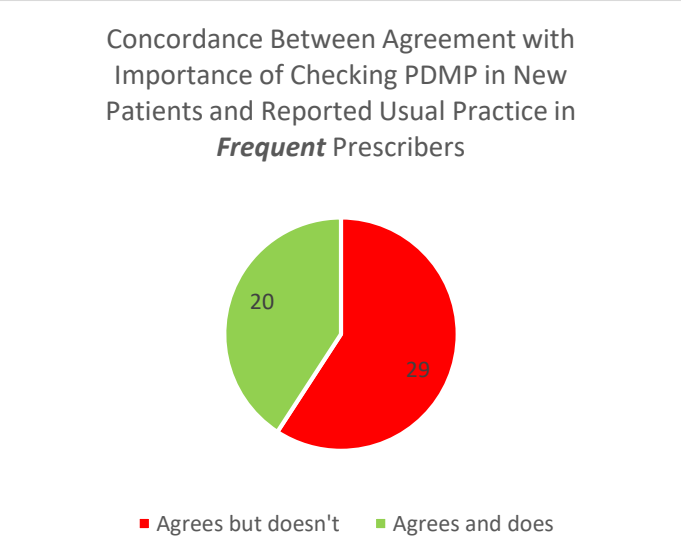
Reported actual practice showed very little concordance between reported beliefs and behavior in both frequent and infrequent prescribers, with frequent prescribers indicating more agreement between beliefs and practice.

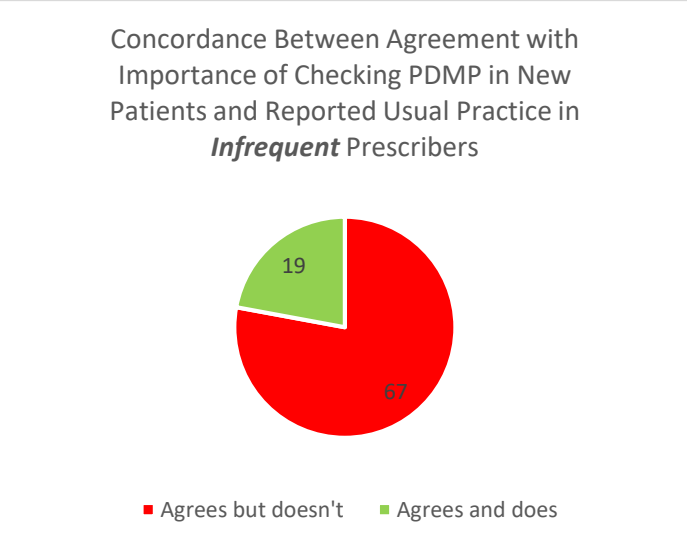
Checking PDMP for New Patients: Attitudes and Reported Practice





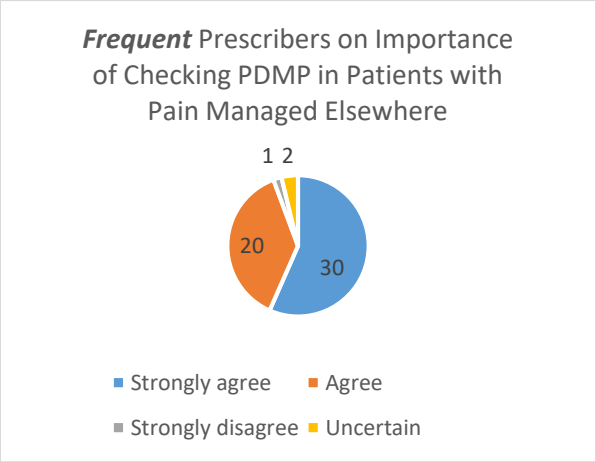
The 53 frequent prescribers largely agreed with the 98 infrequent prescribers on the importance of checking the PDMP in new patients, with less certainty among the infrequent prescribers.

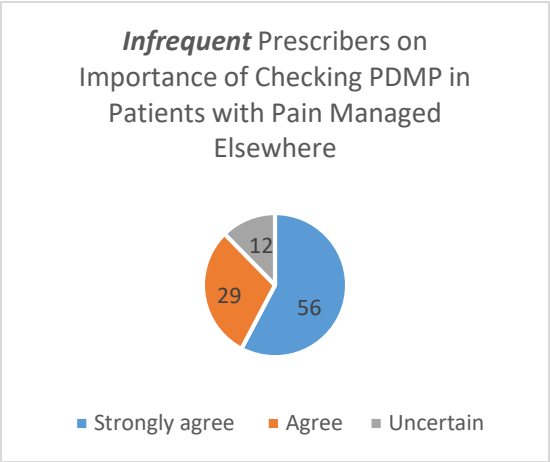




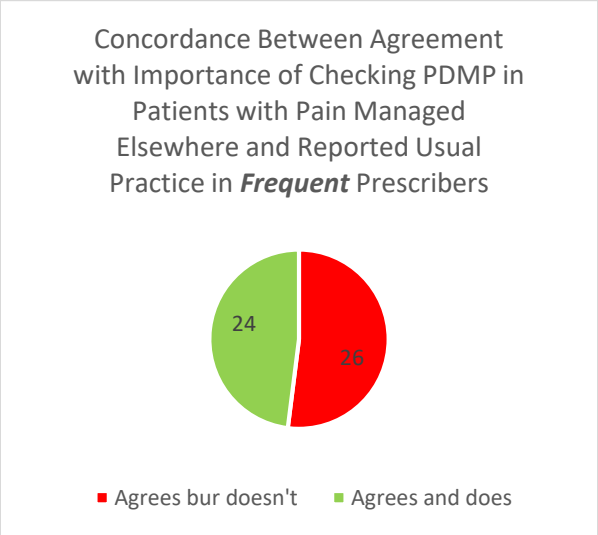
In practice, neither frequent prescribers nor infrequent prescribers agreeing with this practice reported routinely checking the PDMP for patients new to their practice, although frequent prescribers more often reported doing so routinely than infrequent prescribers.

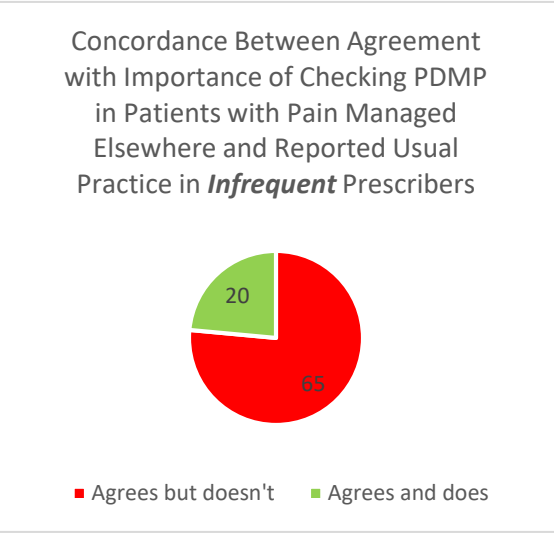
Checking PDMP for Patients with Pain Managed by Other Providers: Attitudes and Reported Practice





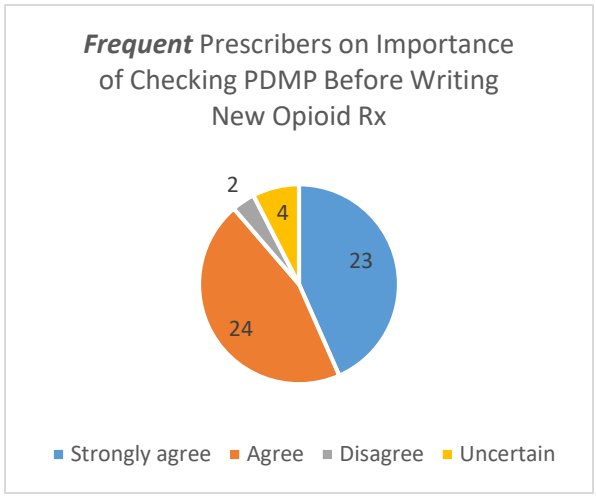
The 53 frequent prescribers largely agreed with the 98 infrequent prescribers on the importance of checking the PDMP in patients with pain managed by other doctors, with less certainty among the infrequent prescribers.

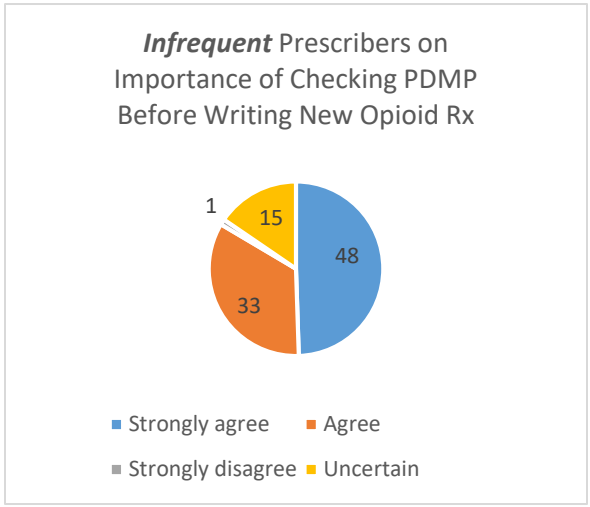




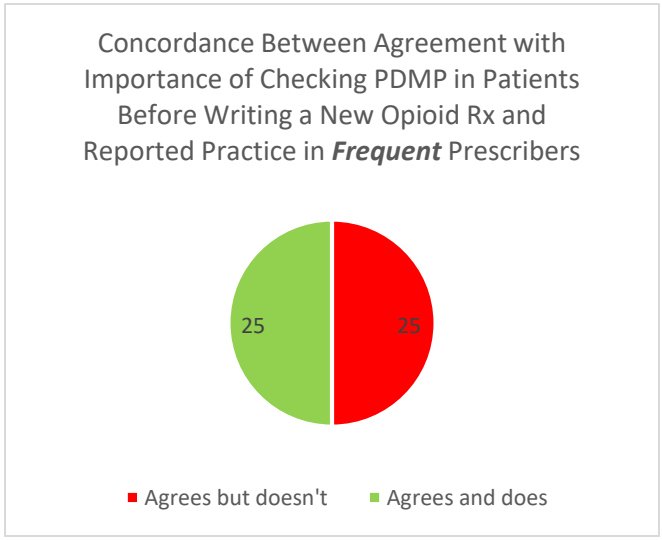
In practice, less than half the frequent prescribers who agreed with this practice reported routinely checking the PDMP in patients with pain managed by other providers. About one quarter of infrequent prescribers agreeing with this practice reported routinely checking the PDMP in this circumstance.

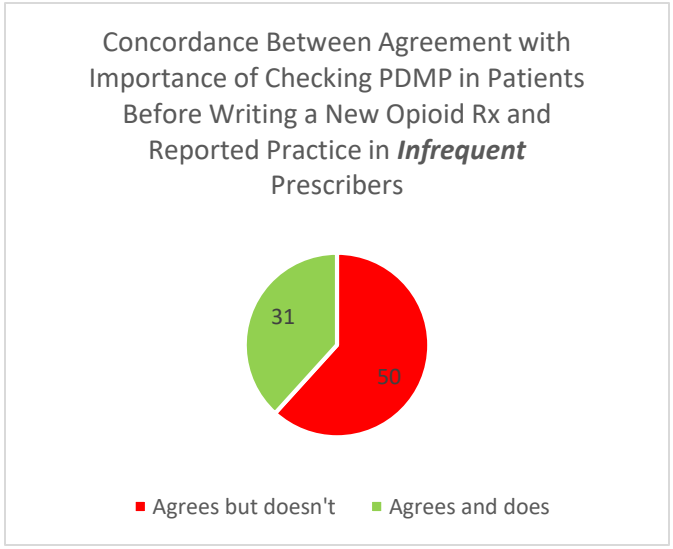
Checking PDMP for Patients Before Writing a New Opioid Prescription: Attitudes and Reported Practice



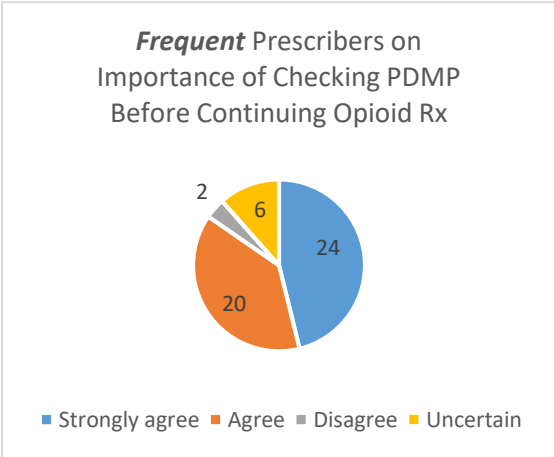


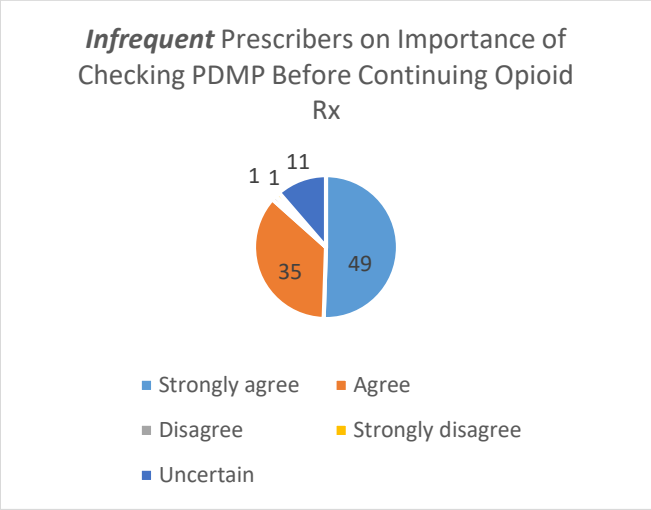
The 53 frequent prescribers largely agreed with the 98 infrequent prescribers on the importance of checking the PDMP in patients before writing a new opioid prescription, with less certainty among the infrequent prescribers.



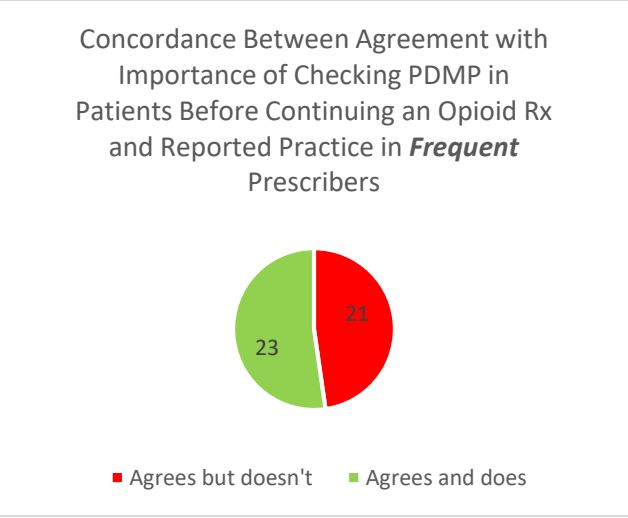


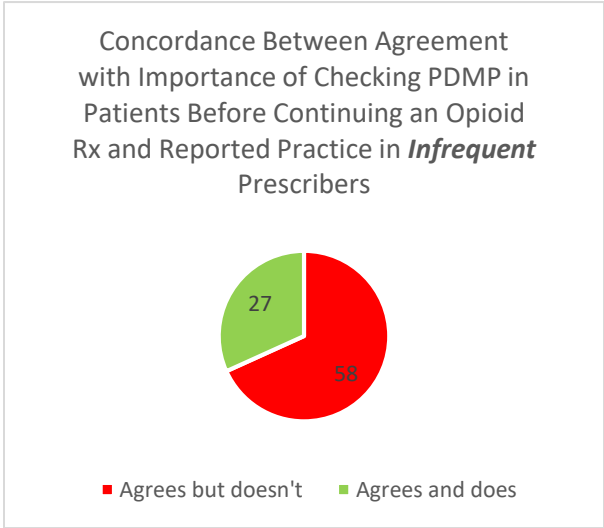
In practice, half the frequent prescribers who supported this practice reported routinely checking the PDMP in patients before writing an opioid prescription for the first time. Thirty-eight percent of infrequent prescribers agreeing with this practice reported routinely checking the PDMP in this circumstance.





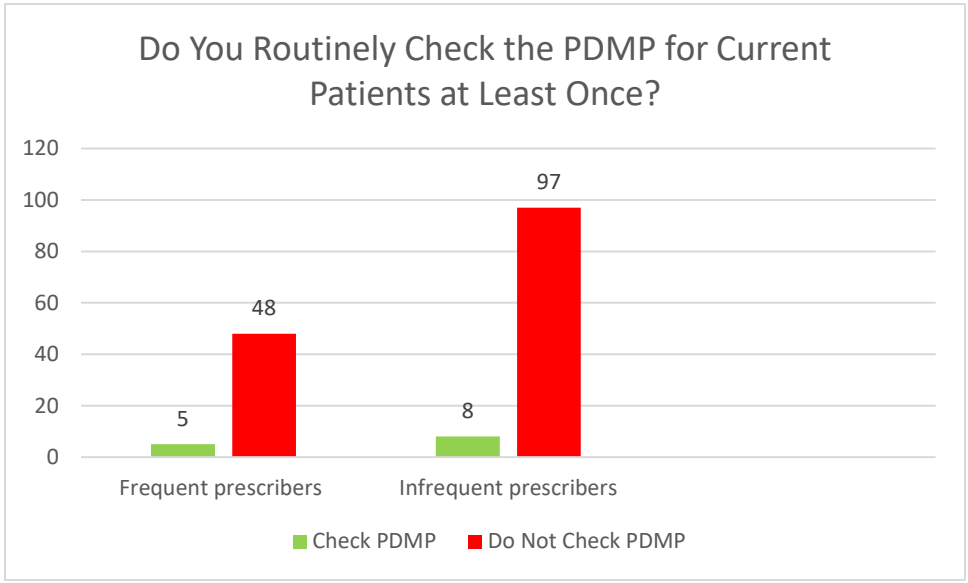
The 53 frequent prescribers mostly agreed with the 98 infrequent prescribers on the importance of checking the PDMP in patients before continuing an opioid prescription, with less certainty among both sets of providers about this scenario compared to others posed.





In practice, slightly more than half the frequent prescribers who supported this practice reported routinely checking the PDMP in patients before continuing an opioid prescription. Of interest, there were two frequent prescribers who reported routinely checking the PDMP in this circumstance despite disagreeing with the importance of this practice. About one-third of infrequent prescribers agreeing with this practice reported routinely checking the PDMP in this circumstance.

Checking PDMP for Current Patients: Reported Practice



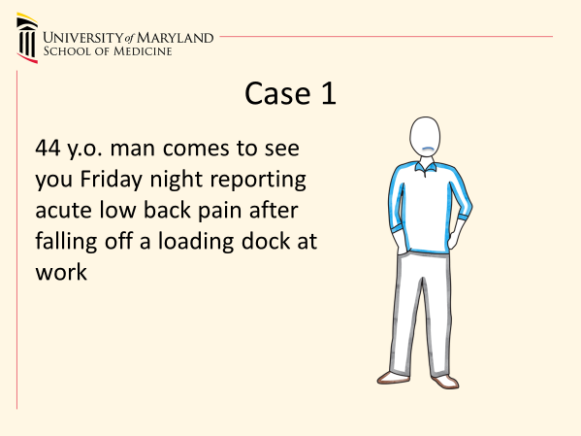
We asked about one other scenario, which did not have a related attitude question. Most participants in both prescribing categories reported that they did not routinely check the PDMP for current patients at least once.

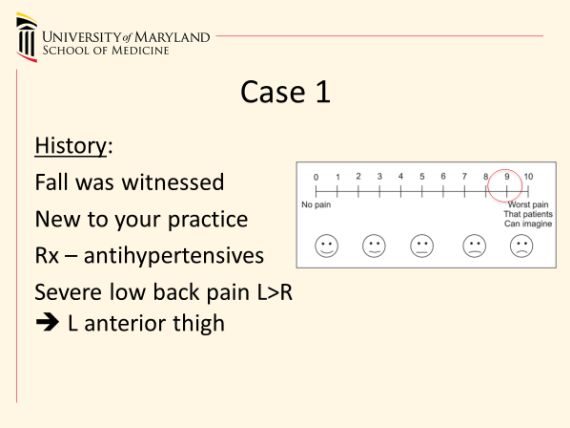
Responses to Fictional Case Studies

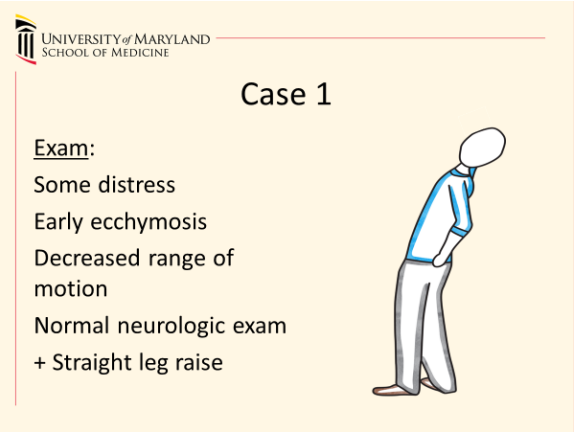
The training module presented three fictional cases and asked the participant to decide what actions to take based on the information provided, then offered the PDMP information, and asked how that changed the management plan.

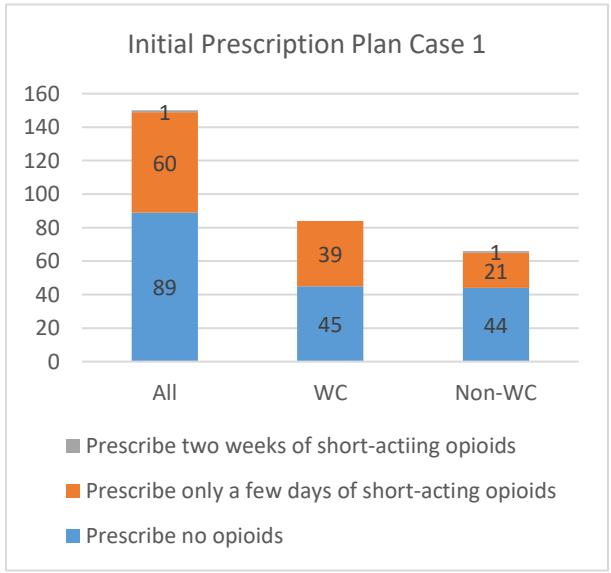
Case 1

Case 1 was designed to represent a common occupational injury, with a scenario of a patient with problematic medication use history.

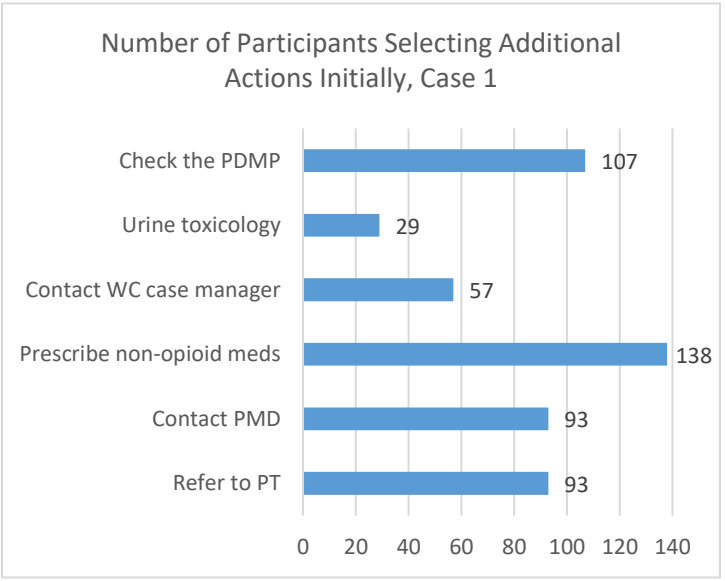




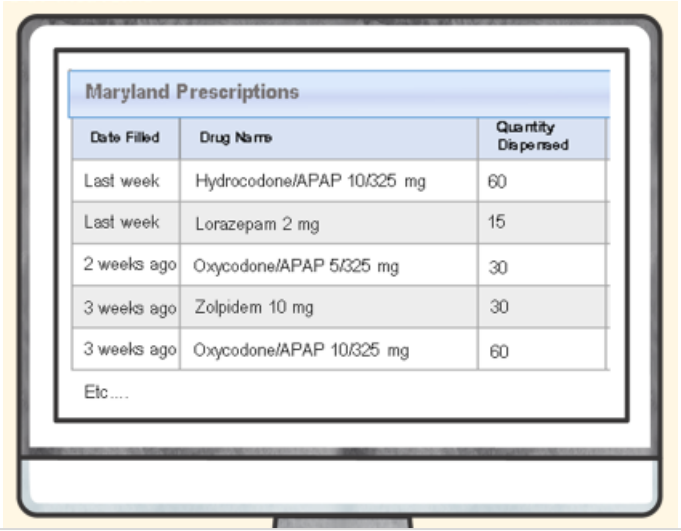


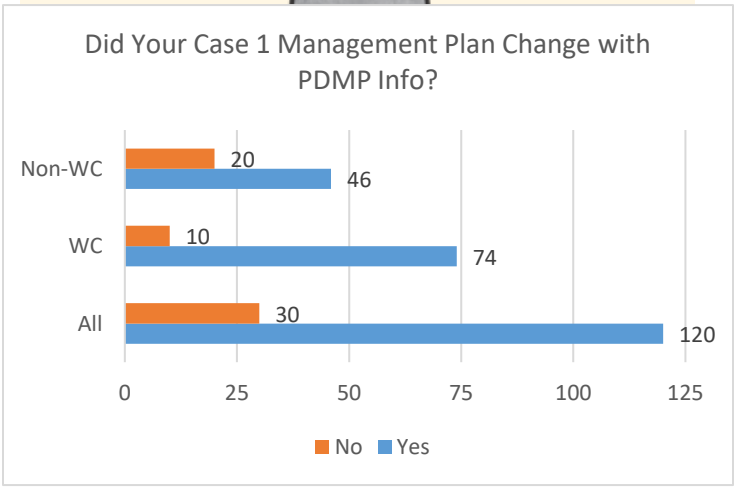


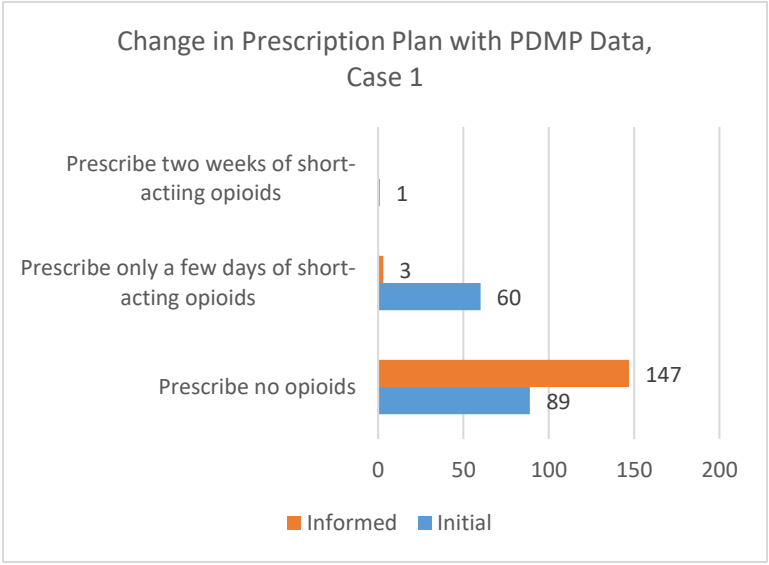
Here are the initial responses for the patient management plan. Most participants reported that they would not prescribe opioids in case 1, before seeing the PDMP data, but a sizable proportion would have prescribed a few days of short-acting opioids. Surprisingly, given the training topic, only 71% said they would check the PDMP.

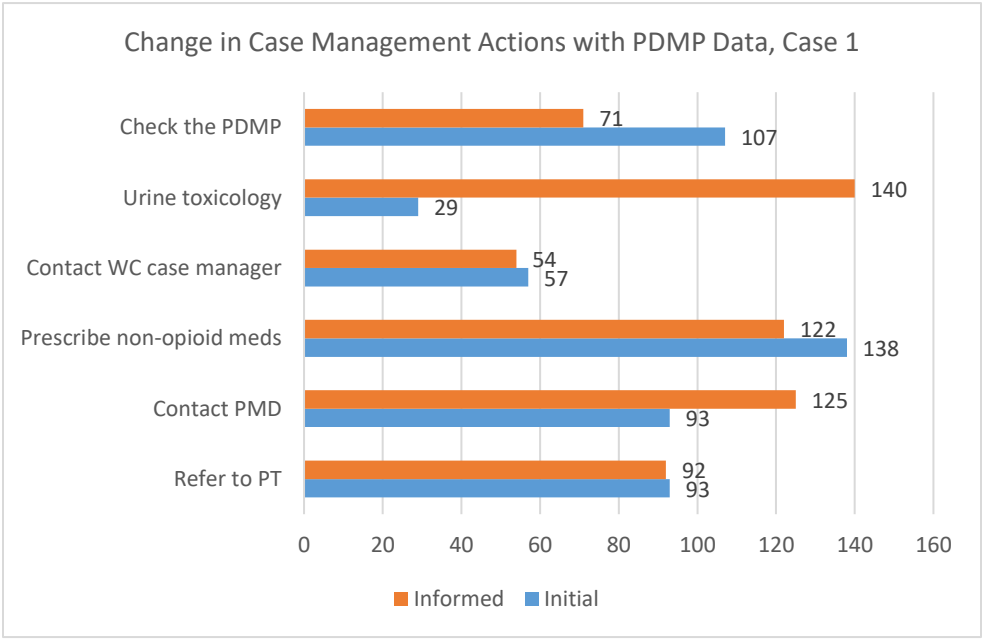


Next the participants were provided the fictional PDMP data for the case and asked again about their treatment plan with this additional information. There were marked changes in the treatment plan with this additional information.



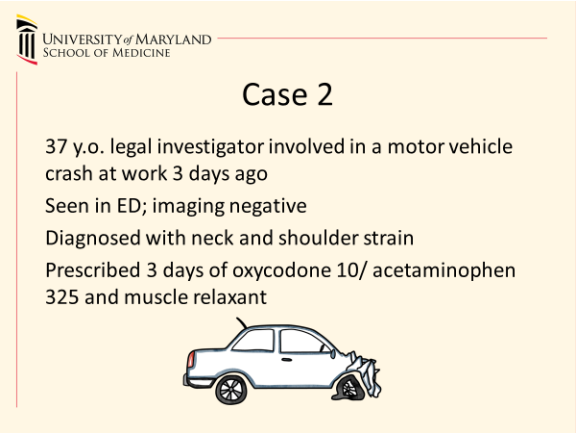


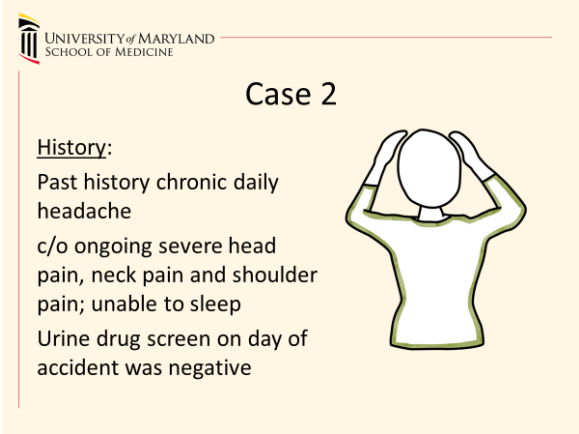


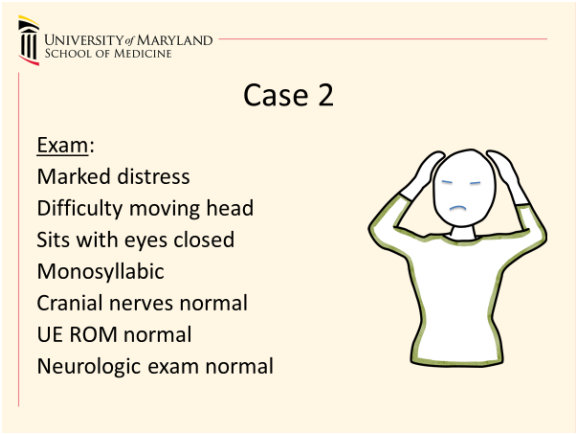


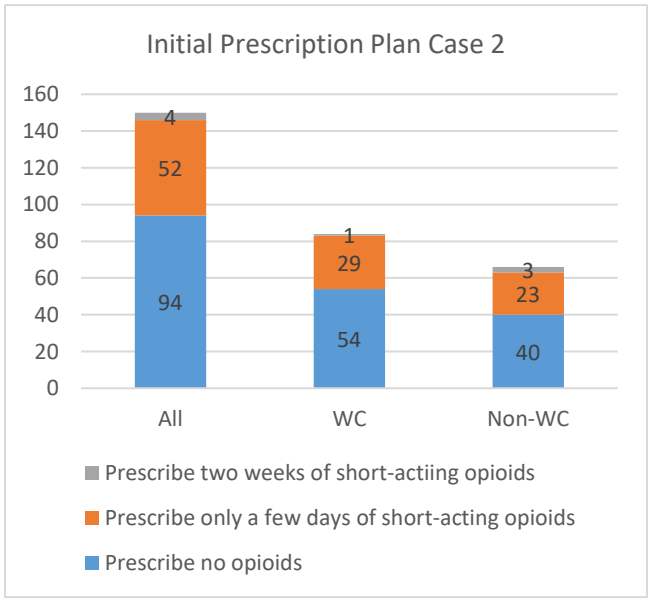
Case 2

Case 2 was designed to illustrate the value of the PDMP in identifying patients at risk for overdose, and to consider the need for psychological services.

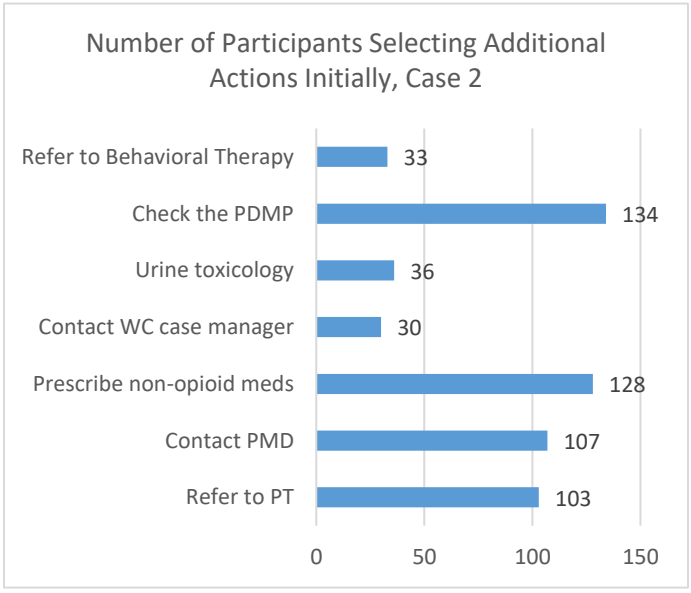




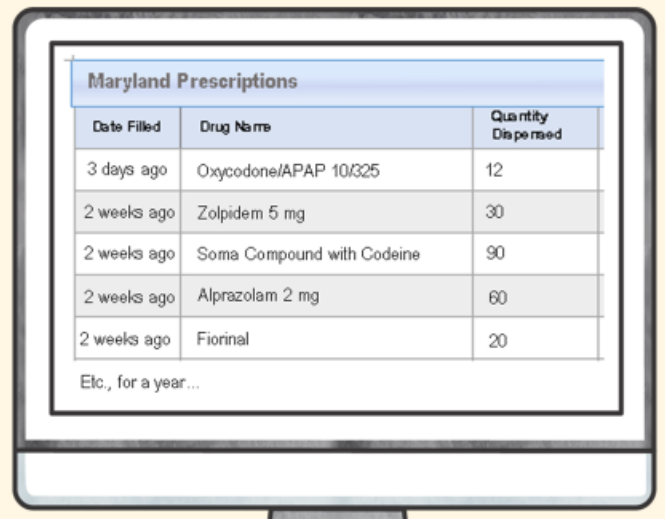




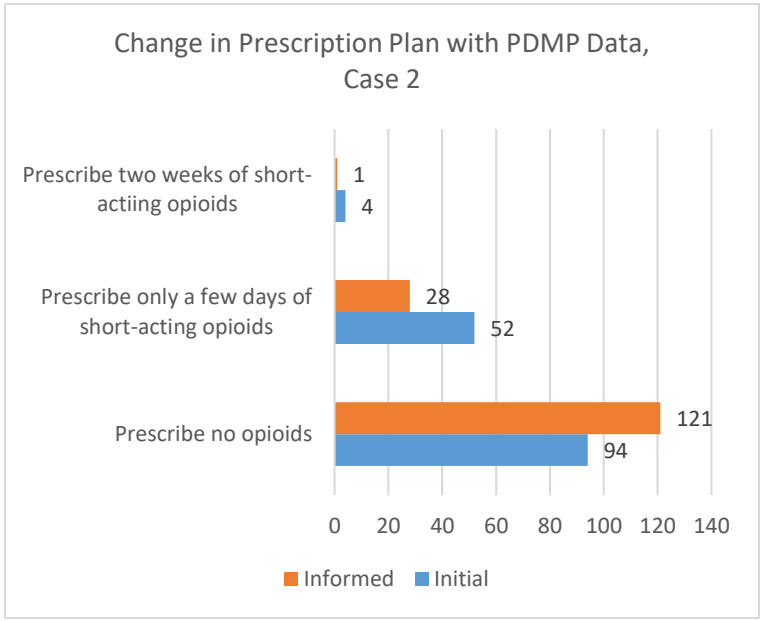
Here are the initial responses for the patient management plan. Most participants reported that they would not prescribe opioids in case 2, before seeing the PDMP data, but a sizable proportion would have prescribed a few days of short-acting opioids. Encouragingly, 89% said they would check the PDMP in this second case.

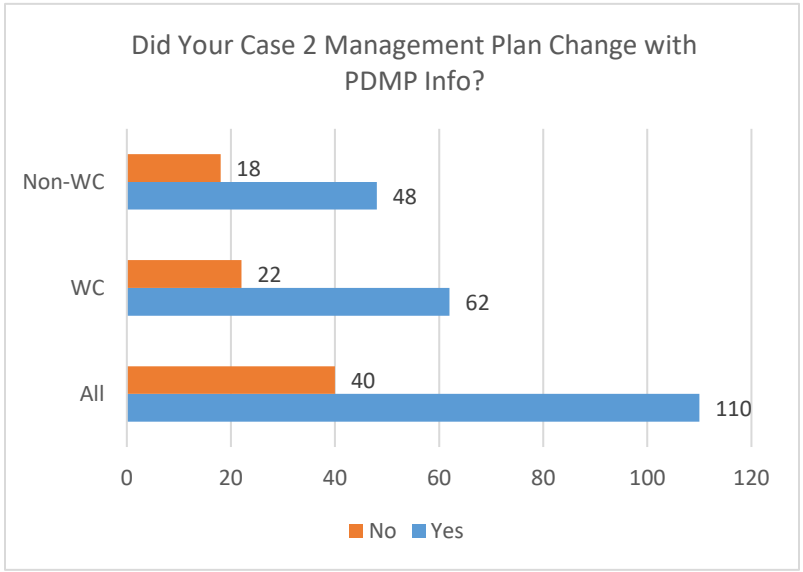


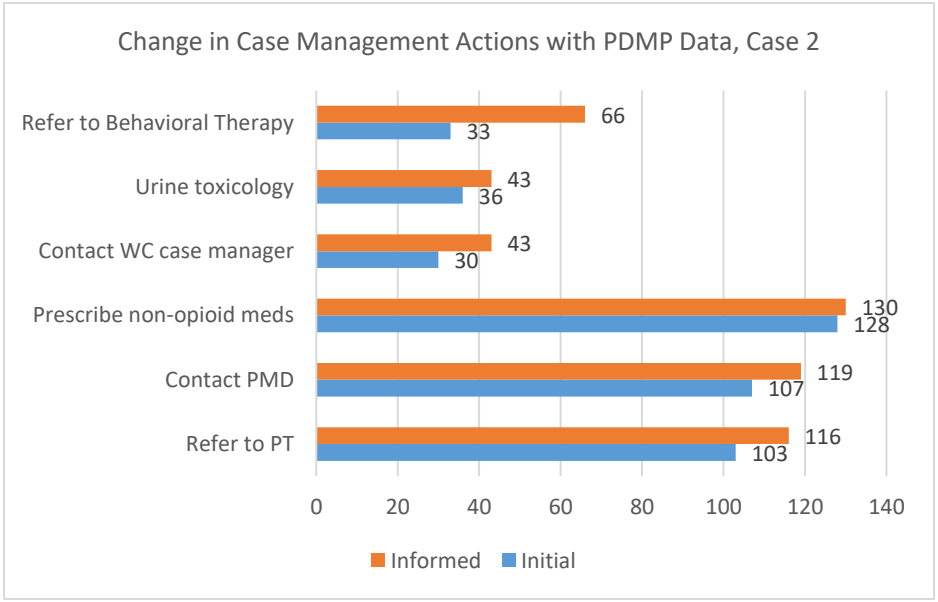
Next the participants were provided the fictional PDMP data for the case and asked again about their treatment plan with this additional information.



There were marked changes in the treatment plan, especially in decision to use opioids and need for behavioral therapy with this additional information.

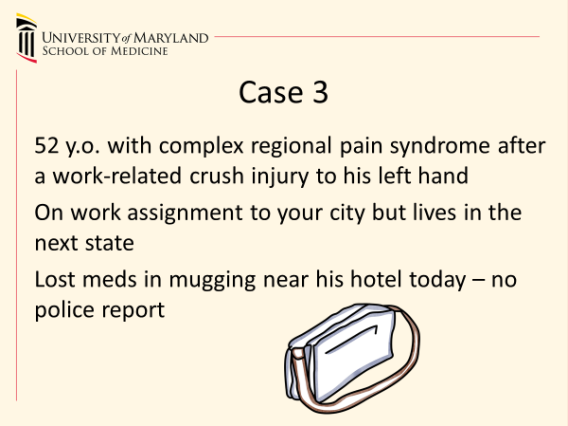


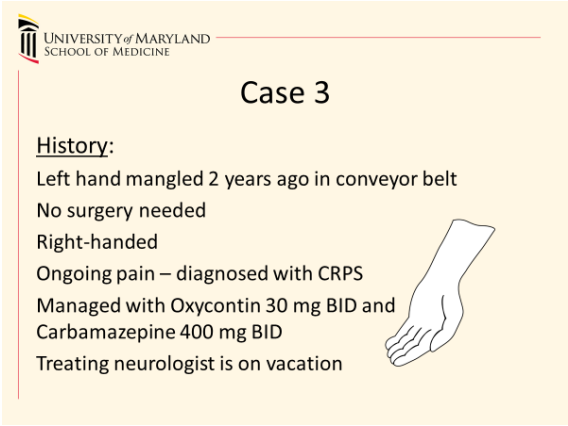


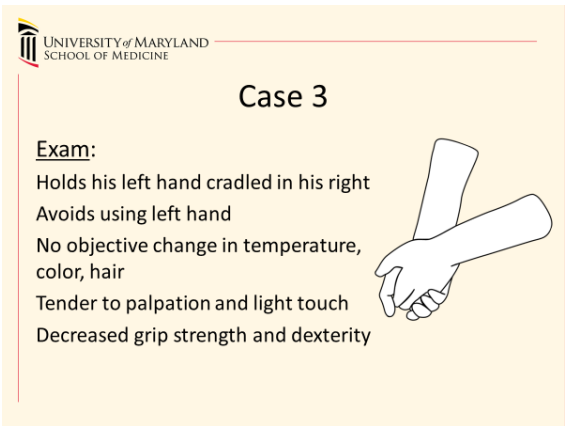


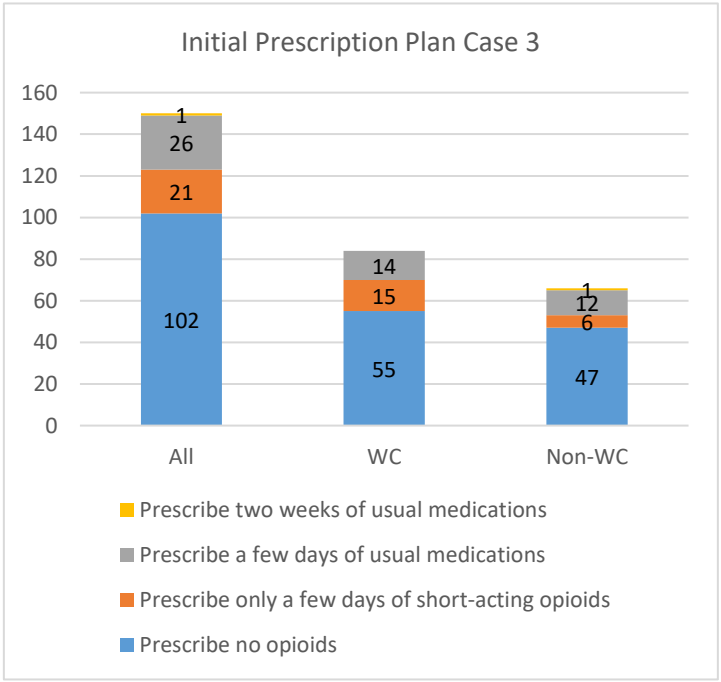
Case 3

Case 3 was designed to raise suspicions of aberrant behavior, and the value of the PDMP in confirming or assuaging such suspicions.

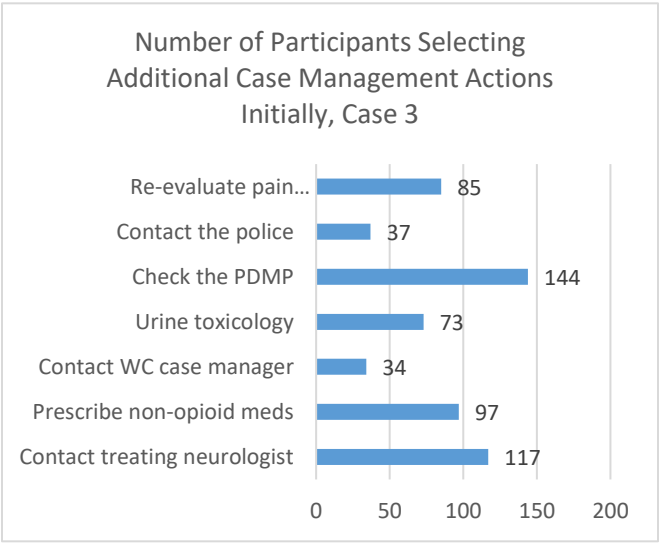




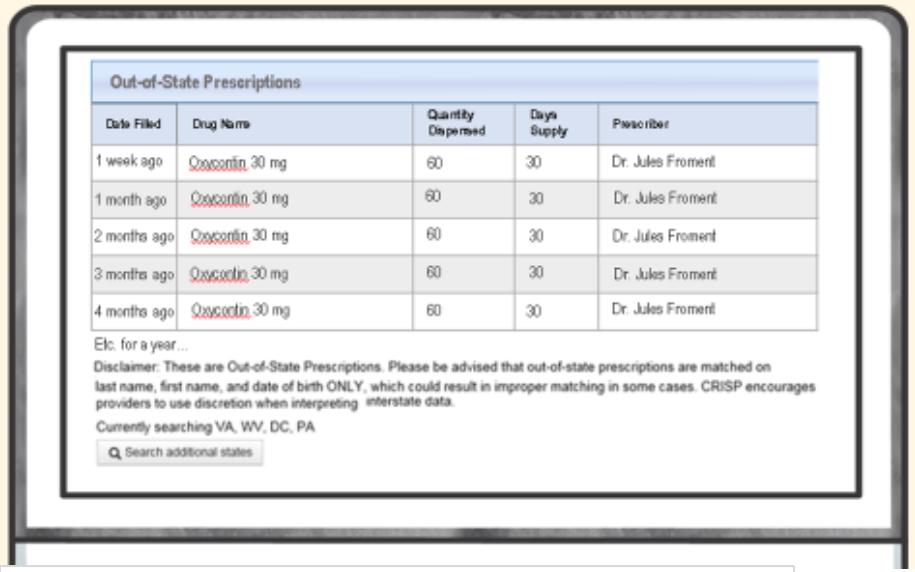




Here are the initial responses for the patient management plan. Most participants reported that they would not prescribe opioids in case 3, before seeing the PDMP data, but a small proportion would have prescribed a few days of short-acting opioids or his usual long-acting medications. Almost all participants had caught on to the importance of checking the PDMP in this 3rd case.



Next the participants were provided the fictional PDMP data for the case and asked again about their treatment plan with this additional information. The PDMP report confirmed the patient's account of his medical history and prescriptions.



Out-of-State Prescriptions

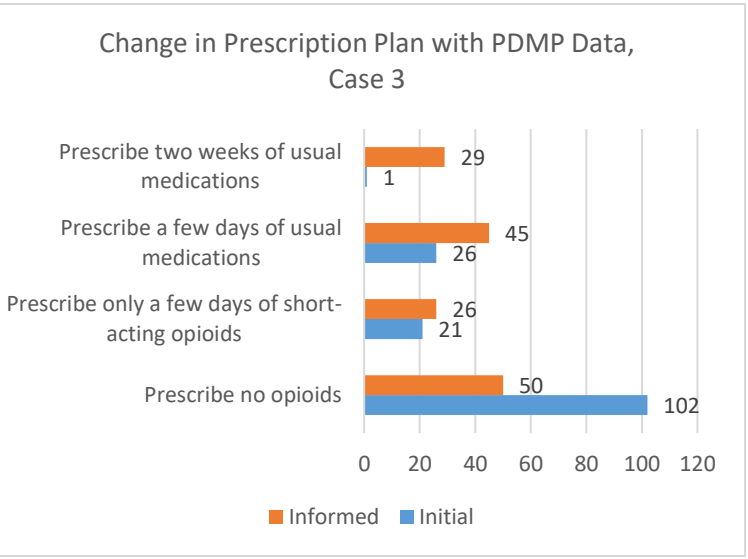
Date Filled	Drug Name	Quantity Dispensed	Days Supply	Prescriber
1 week ago	Oxycontin 30 mg	60	30	Dr. Jules Froment
1 month ago	Oxycontin 30 mg	60	30	Dr. Jules Froment
2 months ago	Oxycontin 30 mg	60	30	Dr. Jules Froment
3 months ago	Oxycontin 30 mg	60	30	Dr. Jules Froment
4 months ago	Oxycontin 30 mg	60	30	Dr. Jules Froment

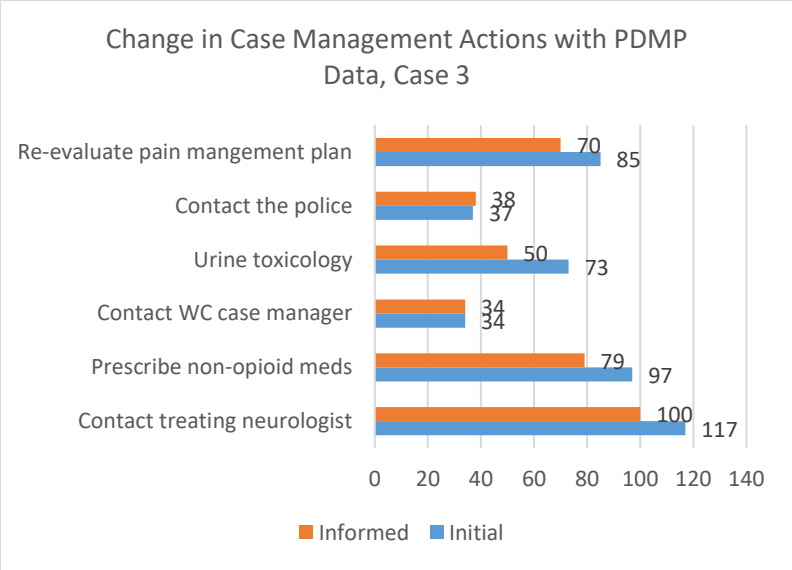
Etc. for a year...

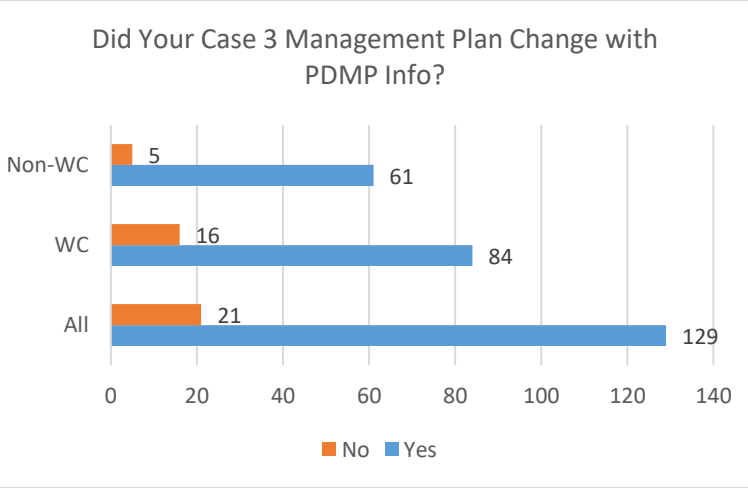
Disclaimer: These are Out-of-State Prescriptions. Please be advised that out-of-state prescriptions are matched on last name, first name, and date of birth ONLY, which could result in improper matching in some cases. CRISP encourages providers to use discretion when interpreting interstate data.

Currently searching VA, WV, DC, PA

Search additional states





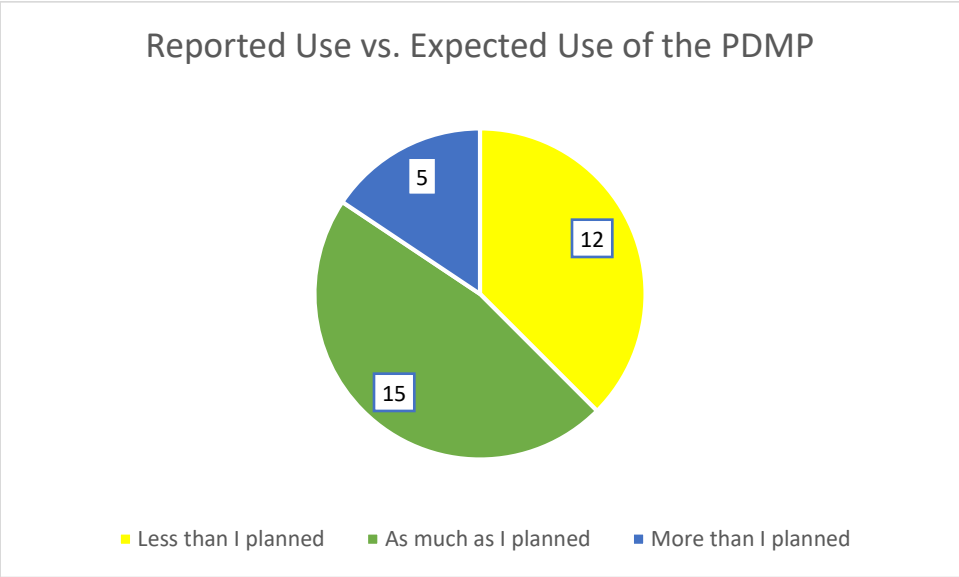


Satisfaction with the Training

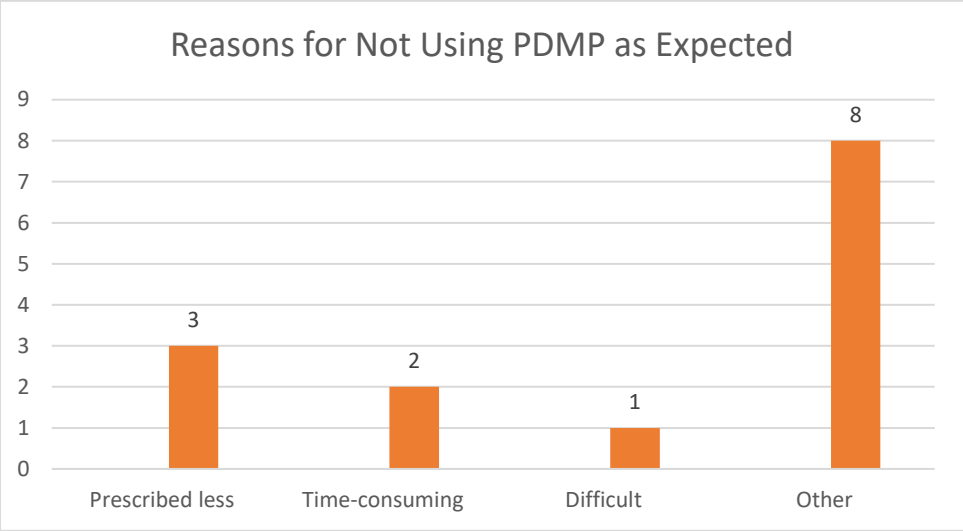
Most participants indicated that they enjoyed the training and found it to be high quality.

Post-Training Survey

There were 59 training participants who agreed to follow-up contact. Of these 32 completed the post-training survey after multiple reminders. About half reported using the PDMP about as much as they had planned to, but a large minority reported using it less than they had planned, with a smaller fraction reporting using it more than they had anticipated.



We asked those who used the PDMP less than they planned to indicate why. Of the twelve who gave this answer, ten provided explanations.



Some of the other explanations were:
Checking the PDMP did not seem necessary in as many cases in which I prescribed opioids, than I anticipated.
I have not prescribed opioids.
I work 2-3 x a month and always get disenrolled from PDMP due to my limited clinical work schedule.
I wrote within the short-duration / low # exception.
I do not prescribe opioids to patients.
I am a cardiologist and do not prescribe opioids very often.

Other comments received:
It would be nice if Methadone and similar drugs were also covered.
I am pleased with how easy it's been to use.
The availability of this resource is invaluable. It is good have a source of information regarding current and new patients.
Our EHR is slow in regard to the PDMP. We have Cerner.
I am retired and only do hospitalist work.
There are some searches in which the patient cannot be found, even verifying the demographics with the patient, there should be a way to have a direct link to report the search and determine what caused the blank screen.
I think it is a great resource to have.
The exercise was well done and informative.
I have not used the Maryland PDMP because I do not do any primary care and I do not prescribe opioids.