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Use of the Prescription Drug Monitoring Program for Substance Abuse Monitoring and Pain Management

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This doctoral project, directed and approved by the candidate's committee, has been accepted by the College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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by

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Dedication

To mom, my sisters (Cherell, Sharon, and Stacey), family, and friends; I would like to take this time and dedicate this accomplishment to you. Without your love, guidance, and perseverance to motivate me, I would not have made it. You all never gave up on me so that I wouldn't give up on myself, and for this, I am eternally grateful.

Finally, my dedication would not be complete without remembering my father, Rogers Beddard, and my aunt, Rebecca Griffin. You always told me "can't" did not exist because you always "can." Guess what, I did because I did not quit! The guidance, love, and strength you bestowed upon me will never be forgotten, and you are always in my heart.

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Abstract

The United States is in an opioid epidemic. The comitant use of opiates and benzodiazepines can ultimately result in death. This project consisted of a quality improvement approach addressing the continued need to educate prescribers on coprescribing benzodiazepines and opioids to the adult population. A qualitative and quantitative descriptive analysis was utilized for data collection. The results will assist in determining if accessing the Prescription Drug Monitoring Program (PDMP) and utilizing evidence-based guidelines before prescribing treatment compared to the nonutilization of the PDMP and evidence-based guidelines aid in the reduction of mortality and overdose rates within a three-month period. The significance of this project was aimed at increasing the use of the PDMP in providing treatment to patients. The recognition of the misuse and abuse of opioids and benzodiazepines, concurrently, indicate the need for a higher level of care and alternative treatment options, therefore, assisting in the reduction in the mortality and overdose rate.

Keywords: opioids, benzodiazepines, misuse, substance use disorder, prescription drug monitoring program (PDMP), substance use treatment provider, primary care provider (PCP), Nurse practitioner (NP), Physician assistant (PA), pain specialist, psychiatrist, and pharmacist

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Chapter 1: Introduction

The United States is in the middle of a substance abuse crisis. The misuse and abuse rate of prescription drugs involving opioids is continually rising. According to the Georgia Senate White Paper (2016), the opioid related overdose deaths in the United States has risen 200% since the year 2000. In 2005, opioids were responsible for more than 28,470 deaths. In the same year, 12.5 million Americans reported the misuse of pain medication. According to the Centers for Disease Control and Prevention (CDC; 2017), benzodiazepines accounted for a 13% increase of the opioid-analgesic poisoning deaths in 1999 and were involved in 31% of the opioid-analgesic poisoning deaths in 2011. Benzodiazepine, another prescription drug used for anxiety, also played a significant role in the substance abuse crisis.

Opiates and benzodiazepines are both very potent drugs. Concomitantly, these drugs can cause a decrease in the function of the central nervous system (CNS) resulting in a decrease or slowing of respiration, sedation, objective impairment, psychomotor effects, cognitive impairment (e.g., learning and memory), coma, and death (Parhami et al., 2015). The combination of opioids and benzodiazepines are commonly prescribed drugs and are a major cause of the increase in mortality in the United States. In 2014, 81 million patients were dispensed an opioid, and 30 million patients were dispensed a benzodiazepine (Hwang et al., 2016). According to the Drug Abuse Warning Network (DAWN), the National Vital Statics System indicate from 2004-2011, opioids and benzodiazepines are the largest contributors to emergency room (ER) visits. The report indicated ER visits due to the illicit use of opioids and benzodiazepines increased from 11.0 to 34.2 per 100,000 population (Jones & McAninch, 2015). The misuse of opioids and associated disorders has cost the United States an estimated $78.5 billion in 2010 (CDC, 2017).

Despite the overwhelming crisis, physicians are providing prescription drugs at an alarming rate. Other risk factors include: doctor shopping (i.e., receiving overlapping prescriptions from multiple providers and pharmacies), obtaining the prescription drug from a family member or friend for recreational use, taking high daily doses of prescription pain relievers, having mental illness or a history of substance misuse, being low-income, and living in rural and urban areas (CDC, 2017).

Problem of Interest

The concurrent use of opioids and benzodiazepines have been described as a lethal combination. Opioids and benzodiazepines have a synergistic effect that causes the body's mechanism to slow down and produces a sense of euphoria. In order to maintain this state of euphoria, increasing amounts of these drugs must be concomitantly ingested. Concurrent use of these drugs is more like taking three or four times the prescribed dose (American Addiction Centers, 2019).

The current statistics on the substance abuse crisis involving the opioid crisis continues to rise at an alarming rate. In efforts to identify causative factors aiding the continuous progression of the substance abuse crisis, Simon et al. (2019) conducted a retrospective study on the "Concomitant Dichotomous variables use of opioids and benzodiazepines in the outpatient setting." The study concluded:

1. clinicians may not be aware of patients concurrently taking opioids and benzodiazepines,
2. emphasized the importance of checking the Prescription Drug Monitoring Program (PDMP) regularly, and
3. utilizing the information from the PDMP to make fully informed decisions regarding the safest possible way to prescribe controlled substances. (Simon et al., 2019, pp. 341–342)

Upon analyzing the results of the aforementioned study, the Problem of Interest (POI) for this project will focus on Prescribers coprescribing benzodiazepines and opioids leading to an increase in opioid and benzodiazepine overdose and resulting in increased mortality rates.

Background of POI

According to the CDC (2017), from 1999 to 2014, the sale of prescription opioids in the U.S. has quadrupled. There has been no overall change in the amount of pain being reported. It has been estimated that 1 out of 5 patients with non-cancer pain or a pain related diagnosis are prescribed opioids in office-based-settings. From 2007 to 2012, the rate of opioid prescribing has increased related to specialists who are managing acute and chronic pain. Primary care accounts for approximately half of the opioid pain reliever prescriptions. In 2012, the state of Georgia, 82.2-95% of the adult population received opioid prescriptions for chronic noncancer pain (CDC, 2017).

In a report completed by the Department of Health and Human Services (H.H.S; n.d.), the driving forces behind the substance abuse epidemic have been attributed to:

1. Prescribing trends – there has been an increase in the number of prescriptions, the quantity of the medication, and the duration.
2. High volume prescribing – a majority of the prescriptions come from specific prescribers.

- General prescribing – prescribers prescribing out of their scope of practice (primary care treating pain management without proper training).
- Pill mills –unethical prescribing habits.
- Emergency departments and hospitals – prescribing medications unaware of the patient's full prescription history.

- Pharmacies – fill large quantities of medicines without validating the legitimacy of the prescription.
- Insurers and pharmacy benefit managers – covering controlled substances as first-line because it is inexpensive. and
- General patients and the public – prescribing a higher number of controlled medications with shorter administration frequencies (e.g., every 4 hours instead of every 8 hours) and patients receiving medicines from friends and family. (pp. 13–17)

Purpose of the Project

The purpose of this project was to provide education to health care providers on the ease of using the Prescription Drug Monitoring Program (PDMP). The educational goal is "to improve the understanding and the dangers of concurrent prescription drug abuse activities, bring awareness to current initiatives, and identify alternatives to ensure the safe use of prescriptions drugs with the potential for abuse and the treatment of prescription drug dependence" (HHS., n.d.).

Significance of POI

Prescription drug misuse has cost the U.S. millions of dollars. In the period between 1993 and 2014, the number of opioid analgesic prescriptions dispensed from retail pharmacies in the United States increased from approximately 113 million to 264 million (Pezalla et al., 2017), with a corresponding increase in opioid-related diversion abuse, and deaths between 2002 and 2010 (Dart et al., 2015). Similarly, between 1996 and 2013, the percentage of U.S. adults who filled a prescription for benzodiazepine increased from 4.1% to 5.6%, and the rate of deaths attributed to benzodiazepines overdoses increased from 0.58 to 3.07 per 1,000,000 adults

(Bachhuber et al., 2016; Hirschtritt et al., 2018). The CDC (2020b) reported the United States spent approximately 1.02 trillion dollars on opioid overdose deaths and the opioid use disorder.

Despite the package inserts placed in all opioid and benzodiazepine medications and the newly drafted guidelines issued by the FDA and the CDC, cautioning healthcare providers to avoid coprescription of these medications, data is indicating these warnings are being ignored (Babalonis & Walsh, 2015). In a prescriber-level analysis performed by Hwang et al. (2016), data showed that approximately half of the patients with a concomitant opioid-benzodiazepine episode filled an opioid and benzodiazepine prescription from the same prescriber on the same day and in some practices the prescriptions were written by multiple providers within the practice. The specializations that attributed to these negative behaviors were "family (18%), internal medicine (15%), and emergency medicine (5%), with psychiatrists (3%) and pain specialist (0.3%) representing a small percentage of concomitant prescribers" (Hwang et al., 2016, pp. 153–154).

In response to the growing misuse and abuse of the prescription drug epidemic, the CDC has recommended prescription drug-monitoring programs, patient review, restriction programs, health care provider accountability, laws to prevent prescription drug abuse and prevention, and better access to substance abuse treatment (Jann et al., 2014). According to Jann et al. (2014), it is imperative for all healthcare professionals to be educated in using evidence-based guidelines to improve medical practices when prescribing opioid analgesics and benzodiazepines.

Nature of Project

According to the Department of Health and Human Services (HHS; n.d.), provider education is listed as one of the eight domains of the current HHS prescription drug activities.

> Education and training in both pain management and substance abuse, especially how to identify patients who may be at risk for abuse and ensure patients treated with opioids receive the appropriate dose and quantity of medication for their condition, are important to address the significant percentage of providers who may be contributing to abuse and overdose because of a lack of training in these areas. (HHS., n.d., p. 23)

The HHS also provides a list of clinical practice tools to assist healthcare providers in the reduction of misuse and abuse of controlled substances. The Prescription Drug Monitoring Program (PDMP) was documented as "one of the most promising clinical tools to address prescription drug abuse. This program is designed to monitor prescribing of controlled substances and can provide a prescriber or pharmacist with critical information regarding a patient's prescription history" (HHS, n.d., p. 25).

This project focused on the use of the PDMP as a tool to guide evidence-based treatment for patients who misuse and abuse prescription medications. A bring your own brown bag Lunch n' Learn seminar was performed during the lunch hour. The presentation included data on the misuse and abuse of prescription medications and the steps that can be taken to assist in lowering the rates of abuse. Healthcare providers were educated on the significance of the PDMP, how to access the database, the risks, and benefits of its use, and how to clinically incorporate the PDMP into their evidenced-based treatment plans to provide the best quality of care. Healthcare providers were informed about the various opportunities to enhance their knowledge and gain continuing medical education via various HHS clinical practice tools offered, such as NIDAMED, an interactive clinical decision-making tool.

Research Question (PICOT Format)

In lieu of the overwhelming data presented on the misuse and abuse of prescription drugs, federal regulations, and proposed disciplinary actions from the licensing boards some healthcare providers are still not 100% on board with the use of the PDMP. The Multnomah County Health Department and Oregon Health Authority surveyed providers on the use of the PDMP. The results of the survey indicated out of the 62% of the respondents, 20% found difficulties registering to use the system and 18% found problems accessing patient information (Orpdmp, 2013). Healthcare providers stated their lack of use resulted from, not having enough time (40%), lack of access for support staff (31%), and the system not being easy to use (17%; Orpdmp, 2013).

The lack of training, time constraints, and general unfamiliarity of PDMPs have shown to be significant barriers to its use (Mospan, n.d.).

> PDMP data are best used in conjunction with other resources of information, including clinical assessment, before making any determinations about aberrant behavior, because no validated and standardized criteria for the threshold of questionable activity has been established. When PDMP data, combined with other information, indicate that a patient may be engaging in the aberrant behavior, the practitioner can use this information in the medical setting with the patient as a basis for an immediate conversation or intervention. (SAMHSA, 2017, p. 4)

Based on the information obtained, a PICOT template will be used to gather information during the research process. PICOT is a formula in which clinical practices can be broken into specific questions in order to further research and explore effective therapy (Guyatt et al., 2008). Guyatt and his colleagues (2008) explained PICOT as:

- (P) – Population refers to the sample of subjects you wish to recruit for your study.
- (I) – Intervention refers to the treatment that will be provided to subjects enrolled in your study.
- (C) – Comparison identifies what you plan on using as a reference group to compare with your treatment intervention.
- (O) – Outcome represents what result you plan on measuring to examine the effectiveness of your intervention.
- (T) – Time describes the duration for your data collection.

The PICOT question for this project was, For prescribers that coprescribe benzodiazepines and opioids to the adult population how does accessing the Prescription Drug Monitoring Program (PDMP) prior to prescribing treatment compared to not accessing the PDMP when prescribing opioids and benzodiazepines decrease the incidents of the misuse and abuse of prescription medications in a 3-month period?

Upon the completion of the three-month survey, the providers were reeducated about the importance of utilizing the PDMP in the clinical decision-making process and its utilization within the treatment plan. The participants were then given a survey requesting a review of their experience using the PDMP.

> In a study of the PDMP's use in the ED, clinicians' review of the PDMP data changed their clinical management in 41% of the cases. Of these cases, 61% received fewer or no opioids than the clinician originally planned to prescribe before reviewing the PDMP data, and 39% received more opioid medication than previously planned because the clinician was able to confirm the patient did not have a recent history of Opioid use. (HHS, 2013, p. 11)

The HHS nonpeer reviewed literature on PDMPs suggest that proactive reporting reduces doctor shopping by increasing awareness among providers about at-risk patients and subsequently changing their prescribing behaviors. Surveys have shown the PDMP as a useful tool for surveillance, reducing drug diversion, and has changed the way clinicians prescribe once they have seen these reports (HHS, 2013).

Hypothesis (Restatement of the PICOT)

After conducting an extensive literary review for this scholarly project, the following PICOT question was chosen: For prescribers that coprescribe benzodiazepines and opioids to the adult population (P) how does accessing the Prescription Drug Monitoring Program (PDMP) prior to prescribing treatment (I) compared to not accessing the PDMP when prescribing opioids and benzodiazepines (C) decrease the incidents of the coprescribing of prescription medications (O) in a 3-month period (T)?

Theoretical Framework Discussion

The theoretical framework used in this project was based on the middle-range theory of unpleasant symptoms (TOUS) created by Lenz et al. (1997). In this theory, it is suggested that any alterations in symptom quality, intensity, timing, and distress via physiologic, situational, or psychological factors will alter patient outcomes (Nguyen et al., 2017). The utilization of TOUS should guide healthcare providers to “ask questions, “such as “What is the symptom experience like for you?” (i.e., quality, intensity, timing, and distress); “Are there other symptoms that occur when you are having this particular symptom?”; “What contributes to making the symptom better or worse?” (i.e., physiological, psychological, and situational factors); or “What effect does the symptom have on your everyday life?” (i.e., performance; Nguyen et al., 2017, p. 5) when assessing patients. It is imperative for healthcare providers to understand and “consider

factors that might influence more than one symptom and the ways in which symptoms interact with each other" (Lenz et al., 1997, p. 14) in order guide and improve decision-making processes and to provide better evidenced-based care. The goal of the healthcare provider is to have a better understanding of the dangers of coprescribing benzodiazepines and opioids, the factors that contribute to the overdose and increase in mortality rates, increase their knowledge base regarding the purpose and benefits of the prescription monitoring program, and recognize alternative treatments for patients instead of coprescribing opioids and benzodiazepines.

Operational Definitions

As aforementioned, the United States is in a current state of crisis dealing with the increased misuse and abuse of opioids and other controlled substances. In efforts to decrease the crisis, the Prescription Drug Monitoring Program (PDMP) was developed. The PDMP "provides law enforcement and other public agencies with surveillance data to identify providers inappropriately prescribing controlled medications" (SAMHSA, 2017, p. 1). The population targeted by the PDMP consists of:

- substance use treatment providers,
- primary care providers,
- nurse practitioners,
- physician assistants,
- pain specialists,
- psychiatrists, and
- pharmacists (SAMHSA, 2017).

Therefore, for the purpose of the project and to fully grasp the importance of the PDMP and it function in healthcare aimed at providing the best evidence-based treatments and the highest quality of care, the following keywords have been defined.

Benzodiazepines. Drugs used to treat a range of conditions, including anxiety, and insomnia (https://www.rxlist.com/benzodiazepines/drugs-condition.htm)

Misuse. Taking medication in a manner or dose other than prescribed (https://www.drugabuse.gov).

Nurse practitioners (NP). Master prepared practitioners (AANP, 2017) who prescribe and/or dispense controlled medications to patients suffering from substance abuse (SAMHSA, 2017).

Opioids. Drugs that act on the nervous system to relieve pain (U.S. Food and Drug Administration, 2021).

Pain specialists. Health care providers that prescribe controlled substances to patients suffering from chronic pain (Tolba et al., 2018).

Pharmacists. Board certified health care professionals that dispense medications. They "are responsible for: the quality of medicines supplied to patients, ensuring that the medicines prescribed to patients are suitable, advising patients about medicines, including how to take them, what reactions may occur, and answering patients' questions" (Blouin & Adams, 2017, pp. 165–166).

Physician assistant (PA). A health care provider, under the supervision of a psychiatrist, treats patients of addiction/mental health on an inpatient or outpatient basis (www.physicianassistantedu.org, 2019).

Prescription drug monitoring program (PDMP). A state-wide database monitoring system used to track the prescribing and dispensing of controlled prescription drugs to patients (HHS, n.d.).

Primary care providers (PCP). A group of health care providers providing integrated, accessible health care services to families and the community (SAMHSA, 1997).

Psychiatrists. Board certified doctors that treat patients suffering from substance dependence and mental health issues (Freed, 2010).

Substance abuse disorder. Harmful or hazardous substances that can lead to dependence syndrome and sometimes a physical withdrawal state (PDMP, 2013).

Substance use treatment providers. Clinicians specializing in substance use disorders and provide care to patients within the community behavioral health clinics (CCBHC; SAMSHA, 2017).

Thus, the purpose of the PDMP was to "help healthcare providers make the most informed prescribing and dispensing decisions, as part of an initiative to address opioid-related overdoses and deaths." Utilization of the PDMP as intended, "can enhance clinical decision making and improve individual patient safety while also helping curb the public health crises of prescription drug misuse and unintentional overdose deaths" (SAMHSA, 2017, pp. 7–8).

Scope of Project

The project involved healthcare providers employed in Community Health Clinics. The educational training on the PDMP and survey lasted three months. Reevaluation consisted of health care providers and their experience with the use of the PDMP.

Chapter Summary

Currently, the coprescription of benzodiazepines and opioids are being reported in such high numbers; the nation has declared it an epidemic. The concomitant use of opioids and benzodiazepines resulting from prescribers coprescribing can lead to death. (Hwang et al., 2016). Therefore, the CDC and FDA have joined forces to implement new guidelines on prescribing controlled substances to protect the general public, issue warnings on the coprescription of controlled substances; therefore, decreasing the misuse and abuse of controlled substances (NIDA, 2018).

A report published by the HHS has cited prescribing patterns of prescribers as a driving force of the substance abuse epidemic.

> The data indicates a small percentage of the providers are responsible for prescribing the majority of the opioids and a small number of patients are responsible for consuming the majority of the opioids; therefore, representing the greatest risk for overdose. (HHS, n.d., p. 15)

In response to the substance abuse epidemic, the PDMP has become the most promising tool to assist in the reduction of the misuse and abuse of controlled substances. The PDMP is a tool that can be used by providers to enhance clinic decision making and improve individual safety while also helping curb the public health crisis of prescription drug misuse and unintentional overdose deaths (SAMHSA, 2017). According to a study conducted by Reifler et al. (2012), data from the poison control centers from 2003 to 2009 reported lower annual increases in opioid misuse/abuse when using the PDMPs. According to the Prescription Drug Monitoring Program Training and Technical Assistance Center, 13 states have mandated the use

of the PDMP by prescribers and dispensers, 27 have mandated prescribers only, and two states have no mandatory laws (PDMP, 2018).

According to Jann et al. (2014), improving and enforcing legislation of existing laws are needed to keep abreast of the compelling circumstances with substance abuse problems. Education and improved medical practice in prescribing opioid analgesic and benzodiazepines are necessary for all healthcare professionals and patients using evidence-based guidelines. Therefore, all healthcare professionals need to monitor their patients closely.

Chapter 2: Literature Search Methods

The search engines that were used consisted of PubMed, CINAHL, Medline, OVID, PsychoInfo, and scholarly evidenced-based journals were used for literature research. Multiple sites such as the CDC, Whitehouse.org, SAMHSA, Georgia Medical Board, and NIDA were used for statistical data retrieval.

Literature Review Discussion

Nguyen et al. (2017) suggested healthcare providers' care should be aimed at decreasing unpleasant symptoms such as emotional stress, anxiety, fear, panic, and pain to achieve optimal patient homeostasis and improve patient outcomes. Pain and anxiety usually co-occur. Lin and colleague (2005) concluded patients with higher levels of anxiety often experience greater levels of pain. According to Lin and Wang (2005), "pain is a unique and personal experience that results from a dynamic interaction of multiple dimensions, including physiological, sensory, affective, cognitive, behavioral, and sociocultural aspects" (p. 2).

Motl and McAuley performed a study in 2009 evaluating fatigue, depression, and pain as predictors of physical activity in patients with multiple sclerosis utilizing the TOUS. The study concluded

> 1) fatigue, depression, and pain represented a symptom cluster; 2) the symptom cluster had a strong and negative predictive relationship with physical activity behavior; and 3) functional limitations, but not self-efficacy, accounted for the predictive relationship between the symptom cluster and physical activity behavior. (Motl & McAuley, 2009, pp. 276–277)

In reviewing the American Chronic Pain Association Resource Guide to Chronic Pain Treatment (ACPA, 2018), approximately 32 million people in the United States have reported pain for

greater than one year. More than half of the patients who have complained of pain are depressed. Approximately 65% who have reported being depressed have complained of pain. Pain is a debilitating factor that can provoke an emotional response of increased depression and anxiety. The depression that is felt may mimic "physical pain" (ACPA, 2016).

According to a study performed by Wilsey et al. (2008), patients with chronic pain who present to the ED and urgent care facilities for opioid treatment have high rates of psychiatric diagnoses and substance abuse. In this study, chronic pain is often associated with an affective disorder (Wilsey et al., 2008). In addition, it was noted that there is "an association between both psychiatric or psychological disorders and problem drug use with initiation and use of prescribed opioids in the general population" (Wilsey et al., 2008, p. 1111). Wilsey et al. evaluated an epidemiologic study that suggested depression, anxiety, and drug abuse disorders were also associated with the increase in opioid abuse. The study results concluded "approximately 60% of patients with chronic pain have two or more psychiatric or psychological diagnoses. Depression was the most common comorbidity followed by anxiety" (Wilsey et al., 2008, p. 1112).

Jones and McAninch (2015) suggested widespread co-use of benzodiazepines and opioids is commonplace. Jones and McAninch (2015) reviewed a study on opioid naïve patients. The study results concluded "benzodiazepine use was a stronger predictor of future opioid use than was musculoskeletal pain. Among patients who abuse opioids, benzodiazepine abuse is prevalent also, and co-users report using benzodiazepines to enhance opioid intoxication" (Jones & McAninch, 2015, p. 494). These are the behaviors that lead to polypharmacy (taking more medication than needed), patient's doctor shopping (trying to get prescriptions to maintain their addiction), and pharmacy shopping (using multiple pharmacies to fill prescriptions and hide their addiction). The co-use of benzodiazepines and opioids can produce a synergizing effect causing

drowsiness, a decrease in respiration, and a sense of euphoria resulting in death (Jones & McAninch, 2015). Thus, the literature review suggests the use of the Prescription Monitoring Program (PMP) used concomitantly with education on nonpharmacological interventions to safely care for patients (Jann et al., 2014). The PDMP is a website that collects and lists all controlled substances prescribed to a patient, the date prescribed, the date filled, the pharmacy that filled the prescription, the name and address of the prescriber, and the quantity of the drug including any available refills (Jann et al., 2014). In addition, it "can enhance the clinical decision making process and improve individual patient safety while also helping curb the public health crisis of prescription drug misuse and intentional overdose deaths" (SAMHSA, 2017, p. 1).

According to the Drug Abuse Warning Network (DAWN) and the National Vital Statistics System, from 2004-2011, the number of ER visits regarding the rate of nonmedical use involving both opioids and benzodiazepines has increased from 11 to 34.2 per 1000,000 population (Jones & McAninch, 2015). Concurrently, the number of opioid analgesics overdose deaths involving benzodiazepines has increased yearly from 18% in 2004 to 31% in 2011 (Jones & McAninch, 2015). Enhancing provider education, focus on strengthening coordination among federal agencies, provider education programs, and continuing to develop and refine targeted educational materials for different types of providers (HHS, n.d.), prevention strategies for the use of prescription databases (PDMP) along with evidence-based guidelines (Jann et al., 2014) will assist in reducing the misuse and abuse of prescription medications.

According to SAMHSA (2017), "Provider surveys, case studies, state evaluations, and other reports offer growing evidence that individual state databases are reducing diversion while also improving individual clinical decision making, prescribing practices, and lowering the rates

of admission for substance abuse treatment" (p. 5). In a survey conducted by the Multnomah County Health Department and Oregon Health Authority, the results of a provider survey on the use of the PDMP from 675 health care providers were: about half (54%) were moderate or active users, and using the system had generated the following activities for the majority of providers in the past 30 days: spoken with a patient about controlled substance use (78%), confirmed patient not misusing prescriptions (68%), confirmed patient was doctor shopping (59%), and/or reduced or eliminated prescriptions for a patient (59%). There was also evidence that system use had led to more communication between providers, other clinicians, and staff within their practice (64%), other providers who write prescriptions (6%), other pharmacists (63%), and patients (79%).

In a review of the effectiveness of PDMP, a research study conducted by Worley (2012), concluded the PDMP reduced the incidence of doctor shopping, changed the prescribing behaviors, and reduced prescription drug abuse. Brandeis University (the PDMP Training and Technical Assistance Center) suggested in a 2014 briefing, the PDMPs were effective in improving clinical decision-making, reduced doctor shopping and diversion of controlled substances, and assisted in other effects to reduce the prescription drug abuse epidemic. In a study conducted by the University of Kentucky Institute for Pharmaceutical Outcomes and Policy (2015), concluded that mandatory provider and dispenser enrollment in Kentucky's PDMP program resulted in closures of nonphysician-owned pain management facilities and a reported 50% reduction in the rate of individuals that doctor shopped.

The final literature review conducted concluded a significant reduction in opioid-related overdose deaths. In this study, Hefei and his colleagues (2017) determined states with the PDMP mandates were associated with a nine to 10% reduction in population-adjusted numbers of

Schedule II opioid prescriptions received by Medicaid participants and similar reductions in Medicaid spending on these prescriptions.

It is evident that the PDMPs are assisting providers in providing a better quality of care while reducing the incidence of misuse and abuse of prescription drugs. However, its effectiveness is based on the provider's compliance with the use of government regulations as part of the standards of care when prescribing controlled substances. Although the morbidity and mortality rates involving opioids may be increasing, the evidence has shown rates of increase has slowed in states that have implemented the PDMP versus the states that have chosen not to implement the program (Congressional Research Service Report, 2018).

According to the Congressional Research Service Report (2018, p. 8), the PDMP is a state-wide program that entails:

1. Hardware such as servers.
2. Software to run the PDMP database and ensure information security.
3. Connectivity such that pharmacies and dispensaries can enter data, and prescribers and /or law enforcement officials can request and access data:
    a. Staff to administer the PDMP and provide technical assistance; and
    b. overhead fees.

The cost to start up and operate such a program involves financing from the state's general fund, prescriber and pharmacy licensing fees, state-controlled substance registration fees, health insurer's fees, direct-support organizations, or via state and/or federal grants (National Legislation & Implementation Meeting, 2010). There are guidelines on how the PDMPs are funded. These guidelines are given to each state and are outlined in the state's PDMP authorizing legislation (Congressional Research Service Report, 2018).

According to the Congressional Research Service Report (2018), as of February 2018, 50 states, the District of Columbia and two territories (Guam and Puerto Rico) had operational PDMPs within their borders. The costs of the PDMP varies with startup cost ranging from $450,000 to over $1.5 million and with the annual costs ranging from $125,000 to nearly $1.0 million (Congressional Research Service Report, 2018). The PDMP is also supported via the federal government through programs such as, a grant called the Harold Rogers Prescription Drug Monitoring Program incorporated into the new Comprehensive Opioid Abuse Program sponsored by the Departments of Justice (DOJ) and the National All Schedules Prescription Electronic Reporting (NASPER) sponsored by the Health and Human Services (HHS), State Demonstration Grants for Comprehensive Opioid Abuse Response, Opioid Prevention in States grants, State Targeted Response to the Opioid Crisis Grants, and various pilots and initiatives under the Office of the National Coordinator for Health Information Technology (ONC; Congressional Research Service, 2018).

Although some states had given assistance with funding via the federal government and supporting agencies, some states prohibited the utilization of the funds (Congressional Research Service, 2018). Thus, hindering the efforts and strategies set forth by the Office of National Drug Control Policy (ONDCP). The ONDCP is a national program responsible for creating policies aimed at reducing the use, manufacturing, and trafficking of illicit drugs and the reduction of drug-related crime and violence and of drug-related health consequences (GAO, 2019).

Opioid-related deaths are now considered to be the leading cause of injury deaths. In the United States, it surpasses deaths caused by suicides, gunshot wounds, and motor vehicle accidents. According to Stein et al. (2017), the opioid-related emergency department visits more than doubled, rising from 22 per 100,000 to 55 per 100,000 in 2011. The emergency room visits

in 2011 related to the nonmedical use of pharmaceuticals and pain relievers were greater than 1.24 million (Stein et al., 2017). The data also indicated Medicaid-enrollees with a history of OUD accounted for 45% of opioid analgesic prescriptions filled, 37% filled benzodiazepines, and 21% filled both within a year of their diagnosis (Stein et al., 2017).

"The annual societal costs of opioid abuse, including overdose deaths, lost productivity, criminal justice costs, and individual health care costs is an estimated $55.7 billion" (Stein et al., 2017, p. 1). In an article written by LaPointe (2019), the opioid overdose care totals $1.94 billion in annual hospital costs between October 2018 and October 2019. The opioid overdose patients were found to would add about $11.3 billion to the United States (U.S.) healthcare system based on current hospital costs data. In reviewing these cases, it was determined that 66% of the overdose patients were insured via Medicaid and Medicare equally. Thus, leaving Medicaid and Medicare to pay for expenses estimated at $7.4 billion (LaPointe, 2019).

In a study conducted by Stein et al. (2017), indicated prescribing opioid analgesics and benzodiazepines to individuals diagnosed w/Opioid Use Disorder (OUD) can increase the risk for medical consequences, relapse, and overdose. Stein et al. (2017) also indicated influences on prescribing practices and medication choices are not limited to physicians in the same practice. These so-called influences can be seen in the practices of other physicians in which patients have been referred. Patients with diagnoses of mental health and physical ailments have ranked the highest in coprescriptions of opioids and benzodiazepines. Stein et al. (2017) concluded the incidence of multiple providers treating patients with OUD need to develop interprofessional collaborations.

In a review of the 2017 Executive Summary, "The Opioid Epidemic from Evidence to Impact," written by Alexander et al. consisted of the following five areas as ways to assist in the reduction of the opioid crisis.

1. Prescription drug monitoring programs, state-level programs governing the use of controlled substance prescribing information for providers, law enforcement and other stakeholders.
2. Clinical guidelines that synthesize information regarding the safety, effectiveness and risk-benefit balance of prescription opioids in different clinical settings.
3. Pharmacy benefits managers and pharmacies, two essential stakeholders in the supply chain whose policies and procedures can reduce unsafe opioid use.
4. Engineering strategies, such as innovative packaging solutions that can reduce non-medical opioid use as well as diversion.
5. Patient and public engagement, such as coordinated, community-based initiatives to raise awareness and facilitate action alongside other interventions that address the broader context in which the epidemic is occurring. (p. 14)

Alexander et al. (2017) made strong recommendations to establish general guidelines for caring for patients with pain management issues. In their report, references were made toward reeducating providers on the opioid crisis concerning writing prescriptions. The report also reminded providers that opioids are not the first line of treatment for chronic non-cancer pain management. Suggestions were made to educate the patients on the opioid epidemic, the risks and benefits of the long term use of opioids, alternative treatments both pharmacological (acetaminophen, nonsteroidal anti-inflammatory drugs [NSAIDs], select anti-depressants, muscle relaxants, select anticonvulsants, and topical analgesics) and nonpharmacological (physical

therapy, therapeutic massage, acupuncture, biofeedback, yoga, and heat or cold therapies), and educate the community on the resources available to the population in need (Alexander et al., 2017).

Upon completing an extensive literature review, it can be determined; the PDMP is a tool that helps to combat the overprescribing of opioids and the concomitant prescribing of controlled substances contributing to the misuse and abuse of controlled substances (Alexander et al., 2017). The PDMP has proven to be beneficial to the patients and all parties involved in their care. The literature does not give a specific monetary benefit of the use of the PDMP because as aforementioned, it is a state ran program, and the regulations vary depending on laws within that state.

In reviewing the adverse effects caused by the misuse and abuse of controlled substances, it is safe to deduce the financial gain from the use of the PDMP would present as follows:

1. a decrease in the number of emergency room visits per year related to opioid abuse and misuse,
2. a reduction in the number of hospital admissions for medical conditions resulting from opioid abuse and misuse,
3. a reduction in violent crime and criminal arrests involving the misuse and abuse of opioids,
4. a reduction in the need for law enforcement services related to drug trafficking due to the misuse and abuse of opioids, (Alexander et al., 2017, p. 13), and
5. a reduction in the medical coverage premiums due to a decrease in the number of opioid abuse cases (LaPointe, 2019).

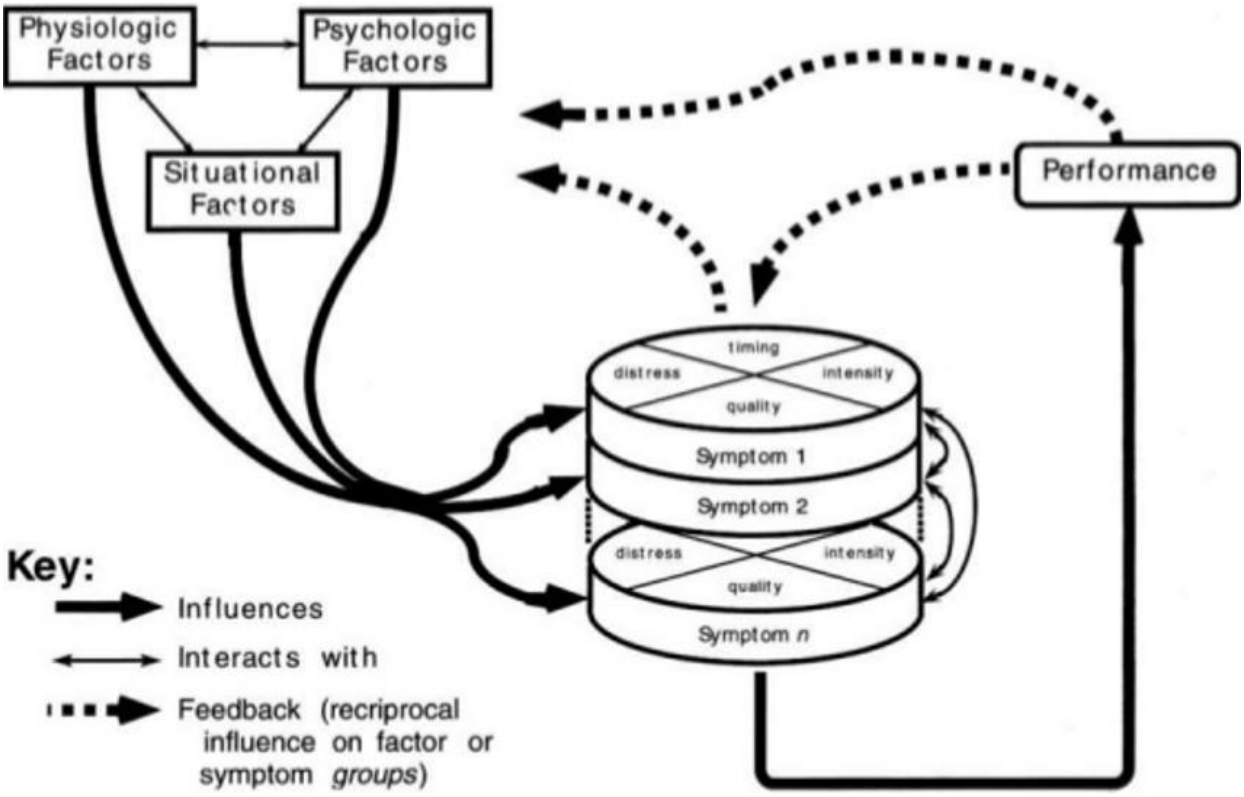
Despite the launching of the PDMP in efforts to combat substance abuse and study results reporting physicians decreasing the number of opioid prescriptions written, the usefulness of the PDMP, and a decrease in opioid-related deaths (Alexander et al., 2017), all parties are still not onboard in the fight against the opioid epidemic. As aforementioned, as of current, 49 states excluding Missouri is participating in the PDMP program (Davis, 2018). The fight against the opioid epidemic cannot be successful without total participation in the efforts being set forth. Thus, assisting in the continuance of the soaring rates reported within this opioid crisis.

Theoretical Framework Discussion

The middle-range theory of unpleasant symptoms created by Lenz et al. (1997), is used to describe the relationship between opioid and benzodiazepine misuse and abuse. In this theory (Figure 1), there are three significant components: influence, interaction, and feedback (Myers, 2009). Lenz et al. (1997) have concluded "the symptom a patient experiences is due to situational, psychological, and physiological factors. The influencing factors give rise to or affect the nature of the symptom experience and the consequences of the symptom experience" (p. 14). The middle-range theory of unpleasant symptoms is a biofeedback theory which allows for one or more symptoms to exacerbate effects on performance as well as to provide a reciprocal influence on the physiologic, psychological, and situational factors (Myers, 2009).

Figure 1

Updated Version of the Middle Range Theory of Unpleasant Symptoms



Note. From "The Middle-Range Theory of Unpleasant Symptoms: An Update," by E. R. Lenz, L. C. Pugh, R. A. Milligan, A. Gift, & F. Suppe. 1997, *Advances in Nursing Science*, *19*(3), pp. 14–27. Copyright 1997 by Wolters Kluwer Health. Reprinted with permission.

Chapter Summary

Prescription drug abuse is a serious health issue that affects all healthcare providers nationally. Addressing this epidemic is not the job of one person but a collaborative effect of all healthcare disciplines. Ultimately, the reduction of the misuse and abuse of opioids will depend upon continual provider education, focus on strengthening collaboration among federal agencies, and prevention strategies for the use of prescription databases (PDMP) along with evidence-based guidelines (HHS, n.d). In addition to PDMP, it is important to provide patient education.

Providers must be available to address patient concerns and offer alternative evidence-based treatments such as, administering non-controlled anxiolytics, teach valuable coping mechanisms, and relaxation techniques involving imagery, massage, breathing, and music intervention (HHS, 2015). Nguyen et al. (2017) suggested that by managing pain and anxiety, healthcare providers can help decrease the incidence of many common complications resulting in reduced recovery time. Thus, according to Stein et al. (2017), individuals with substance abuse disorders are prone to relapse due to a host of environmental, patient, and provider factors. Therefore, it is recommended to use caution in prescribing opioid analgesics and benzodiazepines to individuals with a history of opioid use disorder (Stein et al., 2017).

Chapter 3: Research Method

Currently, the coprescription of benzodiazepines and opioids are being reported in such high numbers; it is being declared an epidemic. The research is still ongoing and the data, which is still being produced, indicates the continued misuse and abuse at alarming rates. In a study conducted by Hernandez et al. (2018), reported an estimated 30% of fatal opioid-related overdoses involved the concurrent use of benzodiazepines. The report also concluded:

1. concomitant opioid and benzodiazepine use were associated with a 3-fold increase in the risk of fatal overdose,
2. that concurrent use was associated with 2.15 times greater odds of an emergency department visit or inpatient admission for overdose,
3. during the first 90 days of concomitant benzodiazepine use, the risk of opioid-related overdose is five times higher compared with opioid use alone, and
4. the numbers of opioid and benzodiazepine prescribers were associated with an increased likelihood of concurrent opioid and benzodiazepine use and an increased risk of overdose and were strong confounders in examining the association between concomitant use and overdose (Hernandez et al., 2018).

Although recommendations against coprescription of benzodiazepines and opioids from various entities such as the CDC, current use of opioids and benzodiazepines has increased by more than 40% in the last 12 years (Hernandez et al., 2018). Therefore, prescribers must be cognizant of their prescribing practices and the prescribing practices of their colleagues. Thus, the use of the PDMP, a tool to assist prescribers in identifying such behaviors as the coprescription of opioids and benzodiazepines and patient misuse or abuse of benzodiazepines and opioids is imperative to help in combating the epidemic. As aforementioned, educating

providers on the use of the PDMP along with evidence-based guidelines when treating patients will result in quality care.

Project Design

The project was designed to provide education on the use of the Georgia Prescription Drug Monitoring Program (PDMP) and evidenced guidelines to foster changes in treatment practices resulting in a decrease in the number of coprescriptions involving opioids and benzodiazepines. A qualitative and quantitative descriptive analysis will be utilized for data collection.

Measurement Tool

The survey tool being utilized in this project is called "Early Assessment of the Prescription Drug Monitoring Program: A Survey of Providers (2013)" (Appendix D). The survey tool originated from a survey performed in Oregon by the Multnomah County Health Department and Oregon Health Authority to evaluate:

1. Methods for and experience with patient notification,
2. Feedback about program start-up and ongoing administration,
3. Perceived utility of the data system as a tool in patient care,
    i. Impact on:
        - prescription behavior and approaches to pain management
        - communication with other providers
        - screening for potential misuse,
    ii. Perceived resource gaps,
    iii. Barriers for using the system more frequently, and
    iv. Suggestions for improvement (Orpdmp, 2013).

The results of the survey tool are in direct alignment of the goal of conducting this project. The results demonstrated improvement in the management of controlled substances (ORPDMP, 2013).

Reliability and Variability

According to Phelan and Wren (2006), reliability refers to the degree to which an assessment tool produces stable and consistent results. In order to test-rest the reliability, one must administer the same test twice over a period of time to a group of individuals. On the other hand, validity, refers to how well a test measures what it is purported to measure (Phelan & Wren, 2006).

In reference to this project's data analysis process, reliability or validity testing was not performed. The tool that was chosen, "Early Assessment of the Prescription Drug Monitoring Program: A Survey of Providers" established in 2013 by the Program Design and Evaluation Services at the Multnomah County Health Department and Oregon Health Authority previously performed the initial reliability and validity testing.

Data Collection and Analysis

The data collection process was completely anonymous. The information collected did not have any information identifying the participants. Confidentially of the data was maintained and only accessible to the principal investigator, the statistician, ACU/IRB team, and project committee members. Utilization of the 5-point Likert Scale (0 = Don't know, 1 = Agree, -1 = Disagree, 2 = Strongly agree, and -2 = Strongly disagree) and qualitative descriptive response will also be used to use maintain confidentiality of the data. In addition, the participant was identified alpha-numerically to ensure anonymity (e.g., physicians will be identified via P, Nurse Practitioners via NP, and Physician Assistants via PA). The data were skewed in the order of

receipt. Therefore, as more data were collected, the number of the identifier increases (e.g., P1, P2, and P3).

Upon the completion of the survey and the data has been collected, the statistician reviewed and formulated the statistical analysis utilizing a qualitative and quantitative descriptive method needed to answer the PICOT question, For prescribers that coprescribe benzodiazepines and opioids to the adult population (P) how does accessing the Prescription Drug Monitoring Program (PDMP) prior to prescribing treatment (I) compared to not accessing the PDMP when prescribing opioids and benzodiazepines (C) decrease the incidents of the coprescribing of prescription medications (O) in a 3-month period (T)?

The data were analyzed to determine:

1. if the provider has accessed the PDMP, has the prescriber changed prescribing practices,
2. if the provider has accessed the PDMP, was there a challenge for the provider to provide more patient education based upon the information obtained from the PDMP,
3. if the provider has accessed the PDMP, was there an increase in interprofessional collaborative relations,
4. if the provider is accessing the PDMP, was the provider prompted to provide patient referrals to higher levels of care, and
5. if the provider is not accessing the PDMP, was there need for reeducation.

The significance of this project was to educate providers and increase their use of the PDMP in providing treatment. The recognition of the misuse and abuse of opioids and benzodiazepines concurrently, indicate the need for a higher level of care and alternative treatment options; therefore, assisting in the reduction in the mortality and overdose rate.

Methodology

The project was conducted within a period of 3-months and was aimed at reeducating providers about the PDMP and the coprescription of opioids and benzodiazepines in Mental Health and Substance Abuse communities. The participants in this project will consist of 99 health care providers comprised of physicians, NPs, and PAs. These providers were randomly selected from the community and that are affiliated with my current practice.

Upon Abilene Christian University IRB approval, a Lunch-n-Learn presentation was held in the conference room. A presurvey was administered to evaluate the treatment practices of the providers when providing treatment plans according to best evidence-based practices. A 60-minute presentation was conducted explaining the significance of the pre- and postsurvey tool, the length of the project study, reeducate providers on the current statistics regarding the opioid crisis, the use of the PDMP, the benefits of incorporating the information from PDMP aimed at providing the most current evidence-based treatments and ensure the highest quality of care was provided.

At the end of the presentation, the participants were given instructions to mail the completed postsurveys in the preposted and pre-addressed envelopes to the P.O. Box provided. The participants were assured their identity and responses would remain anonymous, the data collected and the jump drive would be secured via a double locked system, and placed in a safe for 3 years. After the three-year expiration, the data collected would be shredded and the jump drive erased.

The final phase of the project study consists of a follow-up. The participants were notified a follow-up visit would be performed at the completion of the project to obtain provider feedback on the ease of the project study and any recommendations towards further study

practices. The participants were given the option to have access to the project results once the project has been completed.

Findings

The findings were based on the hypothesis: for prescribers that coprescribe benzodiazepines and opioids to the adult population, accessing the prescription drug monitoring program (PDMP) and utilizing evidence-based guidelines before treatment will assist in the reduction in the mortality and the coprescription rate.

Feasibility and Appropriateness

According to SAMHSA (2017), PDMPs considered to be increasingly valuable and an easy-to-use resource for healthcare providers who prescribe and dispense controlled medication. The utilization of the PMDP in conjunction the clinical decision-making process can assist in the reduction of the misuse and diversion practices of controlled substances, lower the risk of substance use disorders, and prevent opioid overdoses and deaths (SAMHSA, 2017). A brown bag Lunch n' Learn seminar was held in the conference room during lunch. The participates used their personal computers to sign into the PDMP website. No materials or monies were required. This project was not only appropriate for healthcare providers, but it was also an educational seminar that enhanced their knowledge on how to protects their professional license, their professional reputation, and their patients; all while providing good quality care.

IRB Approval and Process

The Institutional Review Board (IRB) is a group of individuals that have been formally designated and charged with the task of reviewing and monitoring biomedical research involving human subjects (FDA Guidance Documents, 1998). At some institutions, the IRB has an

additional role, to take a second look at proposed scientific methods to ensure the highest quality research (Enfield & Truwit, 2008).

According to Enfield and Truwit (2008), federal policy requires that an IRB have at least five members: a chairperson, a scientific member, a nonscientific member, a lay person not affiliated with the institution, and a practitioner. These members must be qualified through:

1. experience or expertise of its members,
2. must have diverse backgrounds,
3. may not be all of one profession, and
4. may not participate in the review of any project that might present as a conflict of interest except to provide information (p. 1332).

The purpose of the IRB is to ensure that the appropriate steps are taken to protect the rights and welfare of the human subjects participating in the research. Utilizing the guidelines set by the FDA, the IRB performs independent reviews of research proposals and related materials such as, informed consent documents, to determine whether they fulfill ethical standards (Enfield & Truwit, 2008).

> A signed informed consent document is [imperative] and evidence that the document has been provided to a prospective subject (and presumably, explained) and that the subject has agreed to participate in the research. IRB review of informed consent documents also ensure that the institution has complied with applicable regulations. (FDA, 2008)

Therefore, the IRB has the authority to suspend or terminate any research project that violates or is not in accordance with the federal guidelines (Enfield & Truwit, 2008).

"The role of the IRB is to safeguard human subjects by training researchers in research ethics and best practices and reviewing research proposals" (Enfield & Truwit, 2008, p. 1333).

Abilene Christian University requires all doctoral candidates to complete the following competencies:

1. NIH/IRB Training (see Appendix H),
2. Human Subjects Research Protections (see Appendix I), and
3. Human Participation in Research (Ethic Course; see Appendix I).

Upon completion of the required core competencies, approval from the project chair and the committee members, I was permitted to defend my project. Providing no revisions were required, I was permitted to present my project to the IRB for review and to ascertain permission to complete the intended project.

Once IRB approval was granted, I then moved into the data collection process. Utilizing a statistician, I could then document the formal findings of the project. After completing the intended project, the project chair and committee members reviewed the project to evaluate for any FDA regulatory compliance or ethical violations. Providing there was no further changes requested from the project chair and committee members, request to perform the final defense of the DNP project was granted. At completion, the project chair and the committee performed their final project review. If there were not any change requests and permission was granted, the project was submitted for editorial review. It was at this point that all major changes were completed according to editorial recommendations. Upon finalization of these changes, the project was then prepared for publishing.

Interprofessional Collaboration

The PDMP is not a federally mandated program. The program is regulated independently by the laws of the state participating in the program (SAMHSA, n.d.). According to the Prescription Drug Monitoring Program Training and Technical Assistance Center (PDMP

TTAC; n.d.), the program is operational in 49 states, the District of Columbia, and one U.S. territory (Guam). Missouri is currently the only state that is not operational (SAMHSA, n.d.).

The PDMP entails data collected from nonhospital pharmacies and prescribers (SAMHSA, n.d.). Prescribers or dispensers of any controlled dangerous substance (CDS) prescription must report the written prescription within 24 to 72 hours including the following information:

1. Type of drug dispensed,
2. Quantity of drug dispensed,
3. Number of days a given quantity is supposed to last (days' supply),
4. Date dispensed,
5. Prescriber and pharmacy identifiers, and
6. Patient identifiers" (SAMHSA, 2017, p. 3).

As aforementioned, due to varying state laws, the various stakeholders that may have access to the data within the PDMP are:

1. Prescribers
2. Dispensers
3. Law Enforcement
4. Regulatory Licensing Boards Researchers, and
5. Medical Examiners/Coroner Substance Abuse Treatment Providers Drug Courts (SAMHSA, 2017, p. 3).

Thus, allying, especially between prescribers and pharmacist, aimed at reducing diversion, misuse, abuse, and coprescription of controlled substances. Ultimately, this alliance will foster a framework of checks and balances requiring interprofessional collaborations to ensure patients

are appropriately filling their medication prescriptions, adhering to the current medication treatment plan, and to provide the highest quality of care to patients.

Practice Setting

This project took place in various facilities within the community. The providers that participated in this project specialized in treating the adult population with mental health and substance abuse disabilities with comorbid pain. In this population, there was a trending tendency to have cocurrent prescriptions for opioids and benzodiazepines. Thus, each provider was asked to take a presurvey and postsurvey relating to the utilization or nonutilization of the PDMP when diagnosing and treating patients changes their evidence-based treatment plan. Informed consent was obtained from the owner of the facilities before any provider was asked to participate in this study.

Target Population

The targeted population included 99 healthcare providers providing care to patients in the community. The providers participating in this project had specialty training and provided services to the adult population with a diagnosis of a mental health and/or substance abuse disorder. The providers were located via the use of the local yellow pages and via colleague referrals.

Risks and Benefits

According to Modizul and McRae (2014), provider risks are:

4. The chilling effect. Healthcare professionals may be reluctant to prescribe controlled substances for fear of legal retribution. The chilling effect could also lead to increased prescribing of alternate medications (substation effect), even if they are inferior in terms of effectiveness or have greater side effects.

5. Patient concerns about the refusal of a prescription for certain medications and consequences. Healthcare providers worry about losing patient clientele because the patient is not satisfied that he/she cannot access their medicine of choice. Patients who are questioned about substance abuse and then denied an expect treatment, they become angry, embarrassed, and cease the treatment, leaving the practice. Often, this results in patients scrutinizing the practice and the healthcare provider. Most times the lack of patient satisfaction results in adverse reporting of the practice and its providers; decreasing revenue.
6. Wrongful categorization as fraudulent prescribers. Many healthcare providers do not have sufficient knowledge enabling them to identify prescription abuse or signs of drug diversion. As a result, the PDMPs may wrongfully suspect and categorized them as fraudulent prescribers.
7. Breach of patient privacy. Healthcare providers are now collaborating with other health care providers intermittently about certain patient cases. Healthcare providers feel that medical consultation is no longer private.
8. The question of Law enforcement or healthcare? The abuse and misuse of prescription medication has become such an epidemic; healthcare providers are comparing the PDMP as a tool to police rather than a component of safety.
9. Mandatory use of the PDMP, time demands, and patient satisfaction. The PDMP requires more time out of an already stressful day. As a lack of training, time constraints, and general unfamiliarity of the database becomes a barrier (Mospan, n.d.), healthcare providers opt not to prescribe controlled substances. This again leads to patient dissatisfaction, poor survey ratings, lack of physician reimbursement and job security. (pp.

2–3)

According to SAMHSA (2017), healthcare prescribers' benefits are:

1. Identifying patients with risky substance use behaviors and refer them to treatment,
2. Educate patient not to share medication prescribed to them, and
3. Promote proper storage and disposal of prescription medications. (p. 8)

Timeline

The implementation of this project began at the beginning of the DNP program, January 2017 and will terminate at the completion of the program, May 2021. The sequence of events for this project are depicted in Table 1. The actual research and data collection process occurred within a span of three-months and has been incorporated within the timeline below.

Table 1

DNP Project Timeline and Task List

Date	Task
January (2017)	- Secured a doctoral prepared mentor - Emailed mentor form to the DNP program director - Began formulating the project PICO question - Performed PICO presentation & peer review to test for proper structure
February (2017)	- Identified the project theoretical framework - Reviewed prospective project chair biographies
May (2017)	- Began writing a problem statement and designing the PICOT question with mentor - Began the literary review process
June (2017)	- Reviewed the DNP project guidelines - Finalized the theoretical framework - Finalized the PICOT statement - Completed the ORSP training class

Date	Task
August (2017)	- Completed the NIH IRB training courses - Began writing Chap. 1 and 2
January (2018)	- DNP handbook acknowledgement r/t DNP project - Secured project chair and committee
March (2018)	- First meeting with project chair to discuss research
April (2018)	- Presented project chair with the PICOT research question, Chap. 1 and Chap. 2 - Secured permission to use survey tool
May – June (2018)	- Chap. 1-3 revisions
July (2018)	- Defense PowerPoint and revision
August (2018)	- Project chair grants permission to send defense PowerPoint and Chap. 1-3 to committee for review
September (2018) – January (2019)	- Chap. 1-3 revisions
February – June (2019)	- Defense proposal presented - Revisions Chap. 1-3
June -July (2019)	- Dr. Gibson, chairperson; approved the IRB submission - Revisions Chap. 1-3
August- July (2020)	- Project presentation - Data collection
August (2020) – June (2021)	- Inactivated data collection - Developed Chap. 4-5 and revisions

Chapter Summary

This project hopes to provide health care providers with the tools and education of incorporating the PDMP with evidence-based guidelines to improve patient treatment, to have a better understanding of the dangers of coprescribing benzodiazepines and opioids, the factors that contribute to the overdose and increase in mortality rates, increase their knowledge base regarding the purpose and benefits of the prescription monitoring program, and recognize alternative treatments for patients instead of coprescribing opioids and benzodiazepines.

Chapter 4: Findings

The PDMP is a valuable tool that was developed to assist providers and pharmacists to recognize patterns of over prescribing, educate patients about addictive behaviors, lower the rate of misuse and abuse of controlled substances via modification of their own prescribing practices, and increase patient safety. Utilization of the PDMP when prescribing control substance allows the provider to ensure patients are not receiving multiple control substance prescriptions with sedative affects (e.g., opioids and benzodiazepines) which increase the risk overdose and death when used concomitantly with an opioid. Upon identification of any addictive behaviors, providers can initiate conversations with the patients about possible medication misuse, provide information on substance abuse treatment, and refer them for substance abuse screening and counseling (SAMHSA, 2017).

Project Analysis

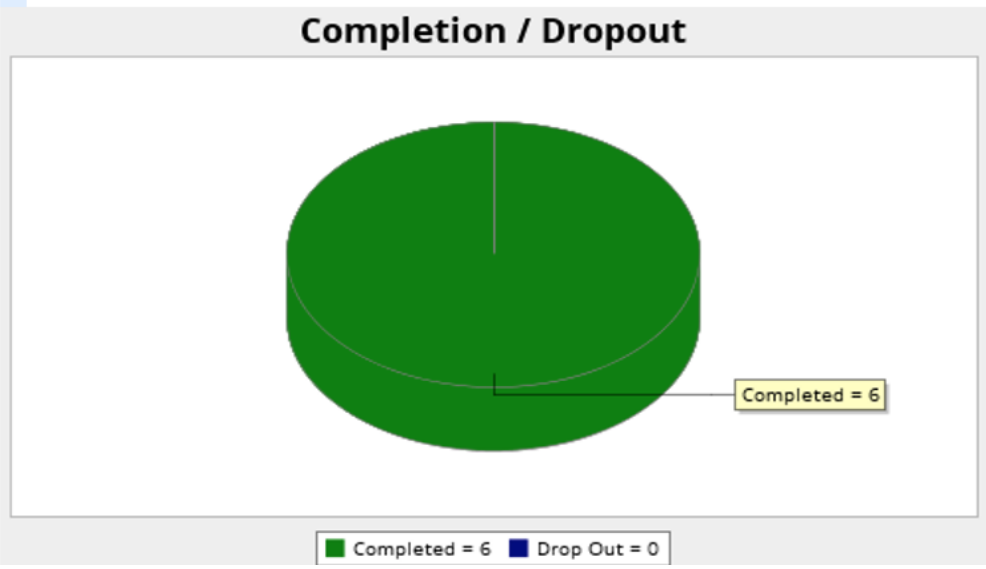
As aforementioned, the purpose of this project was to provide education to health care providers on the ease of utilizing the PDMP, to bring awareness to the current initiatives surrounding the opioid crisis, to improve the understanding and the dangers of concurrent prescription drug abuse activities, to identify treatment plans to ensure the safe use of prescription drugs having the potential for abuse, and alternative treatments for prescription drug dependence (HHS, n.d.).

Discussion of Demographics

The project was to have been composed of 99 health care providers comprised of physicians, NPs, and PAs. These providers were randomly selected from the community and affiliates from my current practice. In review of the provider participation status for the survey, please the survey overview below (see Figure 2).

Figure 2

Survey Overview



Note. Twenty-two participants viewed. Six participants started and completed. Zero dropouts.

Data Analysis

The Likert scale, developed by Likert in 1932, was developed on the principle of measuring people's attitude by asking a serious of questions about a specific topic and measuring their responses (Likert, 1932). The Likert scale has many varied responses and are ranked from least to most (Allen & Seaman, 2007). Examples of such responses are:

1. Agreement: strongly agree to strongly disagree,
2. Frequency: Very Frequently to Never,
3. Importance: Very Important to Unimportant, and
4. Likelihood: Almost Always True to Almost Never True. (McLeod, 2008, pp. 1–2)

   [Although], "in its final form, the Likert Scale is a five (or seven) point scale which is used to allow the individual to express how much they agree or disagree with a particular statement" (McLeod, 2008, p. 1); "scales are sometimes truncated to an even number of

categories (typically four) to eliminate the neutral option to [requiring a] forced choice." (Allen & Seaman, 2007, p. 1)

According to Boone and Boone (2012), the Likert scale is composed of a series of four or more Likert-type items and they must be combined into a single composite score/variable during the data analysis to obtain a quantitative measure of a character or personality trait. Boone and Boone (2012) further suggested to properly analyze Likert data, in the analysis process, the Steven's scale of measurement should be utilized. The Steven's scale categorizes data into four categories:

1. nominal scale – In this scale, observations are assigned to categories based on equivalence and the numbers associated with the categories serve as only labels (e.g., gender, eye color and race).
2. ordinal scale – In this scale, observations are ranked and measured by magnitude. Here, the numbers only indicate order (e.g., letter grades, rankings, and achievement [low, medium, high]),
3. interval scale – In this scale, the data use numbers to indicate order and reflect meaningful relative distance between points on the scale. Interval scales do not have an absolute zero (e.g., IQ test).
4. ratio scale – In this scale, the numbers indicate order and reflect a meaningful relative distance between points on the scale and does not have an absolute zero (e.g., age and years of experience; Boone & Boone, 2012).

The numbers that are attached to the data within the Likert scale depicts a relationship of "greater than" and meets the requirement of the ordinal data scale. The data itself expresses measurements via the mode or median for central tendency and frequencies for variability. Thus,

descriptive statistics is recommended. The ordinal data can be further analyzed utilizing the chi-square measure (Boone & Boone, 2012). The chi square measure is used for testing relations between categorical variables to prove their independence (McHugh, 2013).

Likert data can also be an analyzed via the interval measurement scale by calculating a composite score (sum or mean). The descriptive statistics recommended for this scale would include the mean for central tendency and standard deviations for variability. Data resulted from the interval scale can also be further analyzed utilizing the Pearson's r test. ANOVA, and regression procedures to show variable correlations (Boone & Boone, 2012).

According to McLeod (2008), when analyzing the data from a Likert Scale:

1. Summarize the data using a median or a mode (not the mean). The mode is probably the most suitable for easy interpretation.
2. Display the distribution of the observation in a bar chart and not a histogram. A histogram cannot be used because the data is not continuous. (p. 2)

According to Boone and Boone (2012), if the Likert questions are unique and stand-alone, then they should be analyzed as Likert-type items. The survey data can be resulted using the following statistical tools: modes, medians, and frequencies (Boone & Boone, 2012, p. 3). Thus, below are the results from the project survey.

Question Guiding the Inquiry

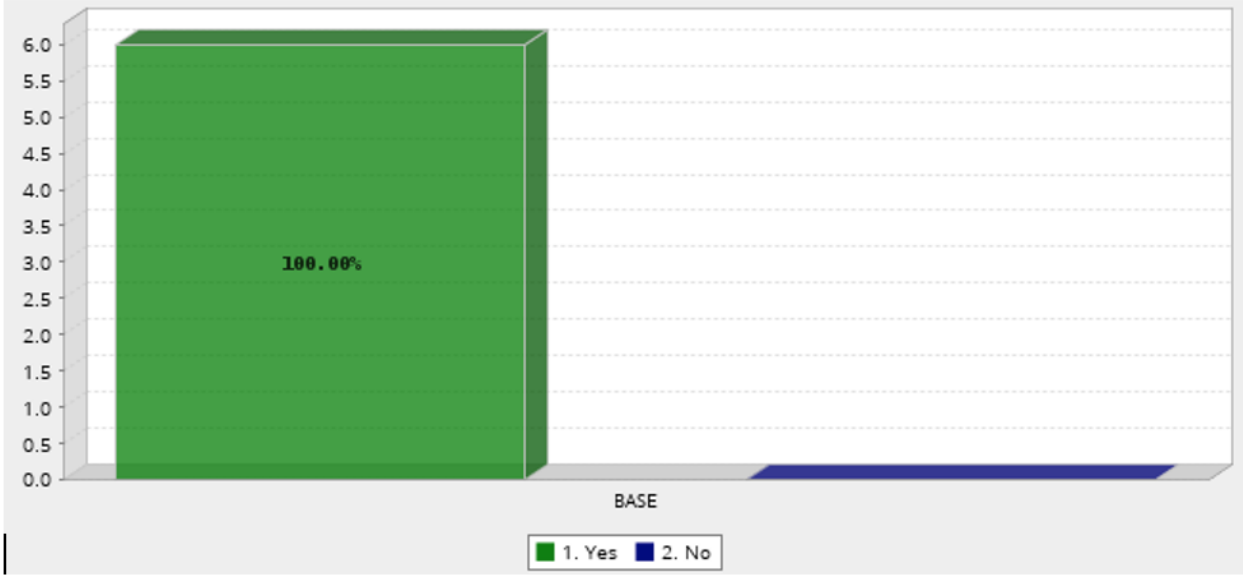
As aforementioned, the PICOT question for this project was, For prescribers that coprescribe benzodiazepines and opioids to the adult population how does accessing the Prescription Drug Monitoring Program (PDMP) prior to prescribing treatment compared to not accessing the PDMP when prescribing opioids and benzodiazepines decrease the incidents of the misuse and abuse of prescription medications in a 3-month period? The survey tool, "Early Assessment of the Prescription Drug Monitoring Program: A Survey of Providers (2013)," was

used in this project. The following questions were extracted and analyzed to answer the previous mentioned PICOT question (see Figures 3–44).

Figure 3

Knowledge of the PDMP

Q1. Do you have any knowledge of the Prescription Drug Monitoring Program (PDMP)?



Q2. Considering this program, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements. *Please choose one answer per statement.

Figure 4

PDMP Management of Prescription-Controlled Substances

Q2a. This program is likely to improve management of patient prescription for controlled substances.

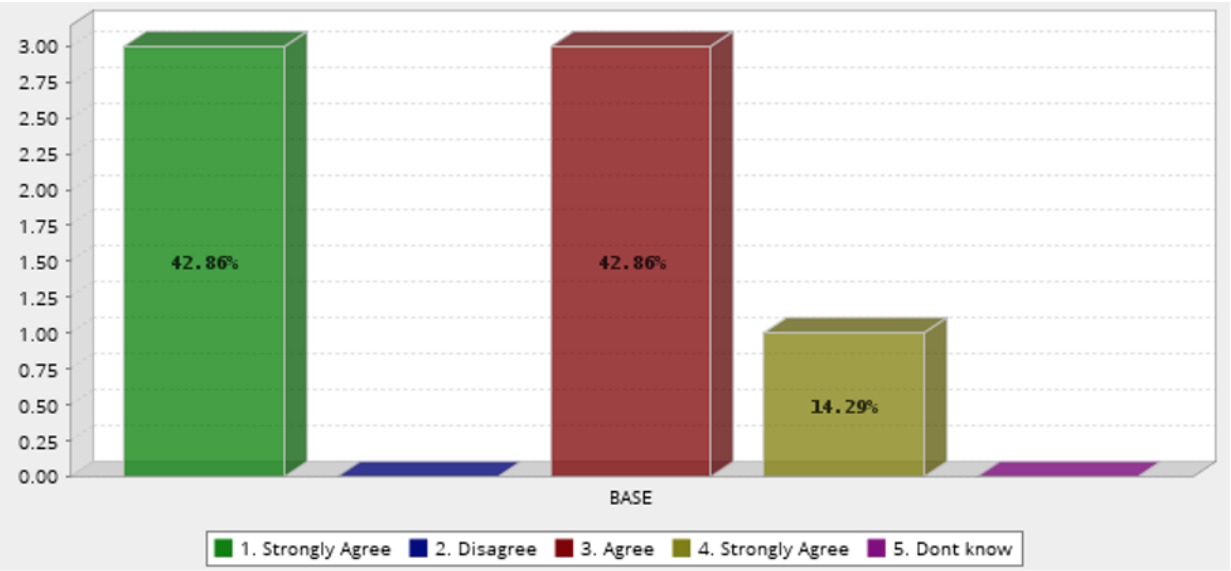


Figure 5

Registering and Accessing the PDMP

Q2b. Over time, I think most providers and pharmacists will be interested in registering to access and use this data system.

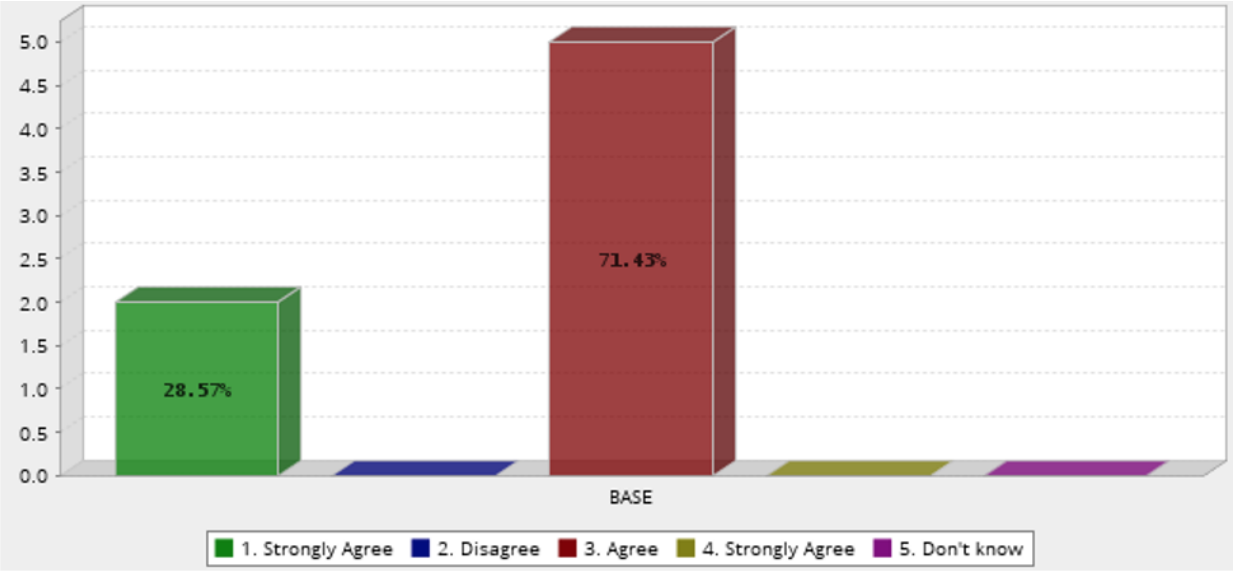


Figure 6

Communication Between Providers

Q2c. This program will likely increase communication between providers.

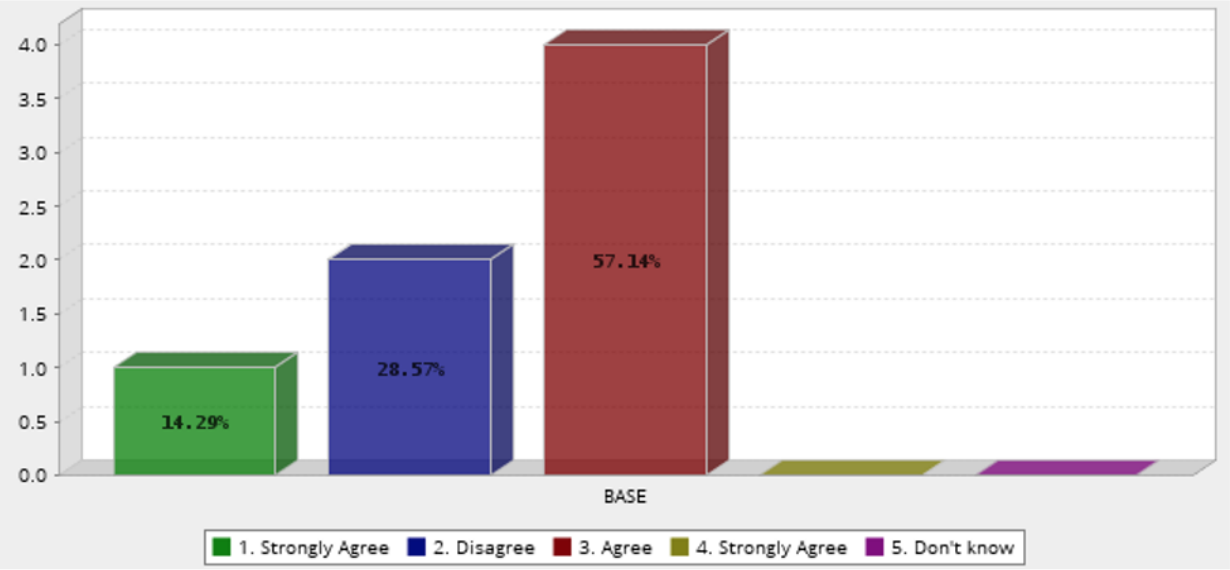


Figure 7

Impact of the PDMP

Q2d. This prescription monitoring program will not have much impact.

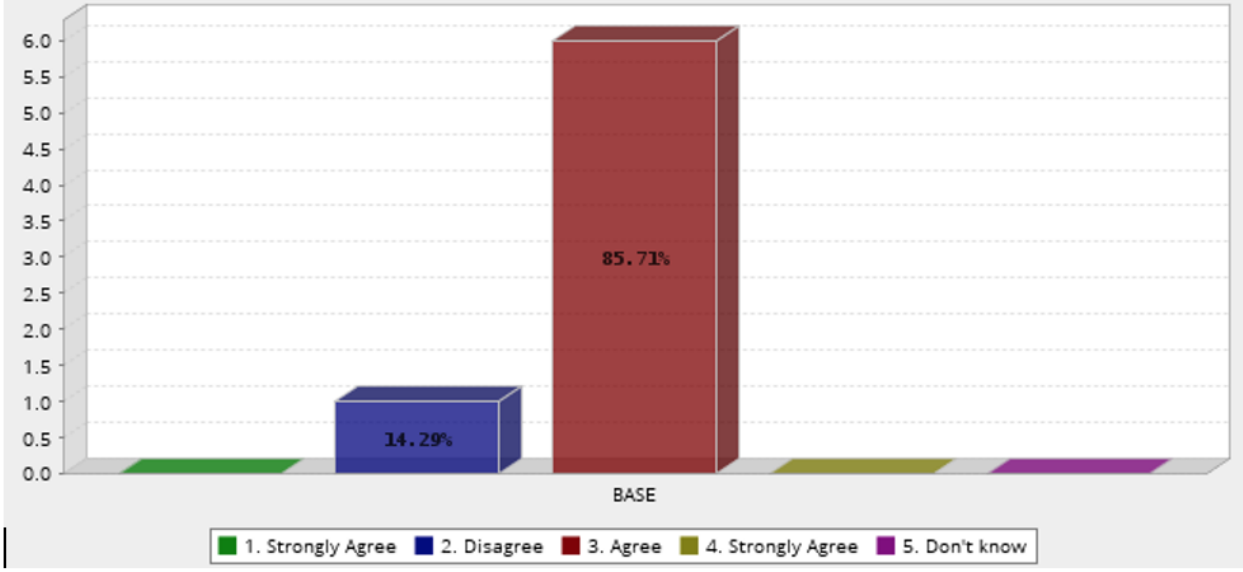
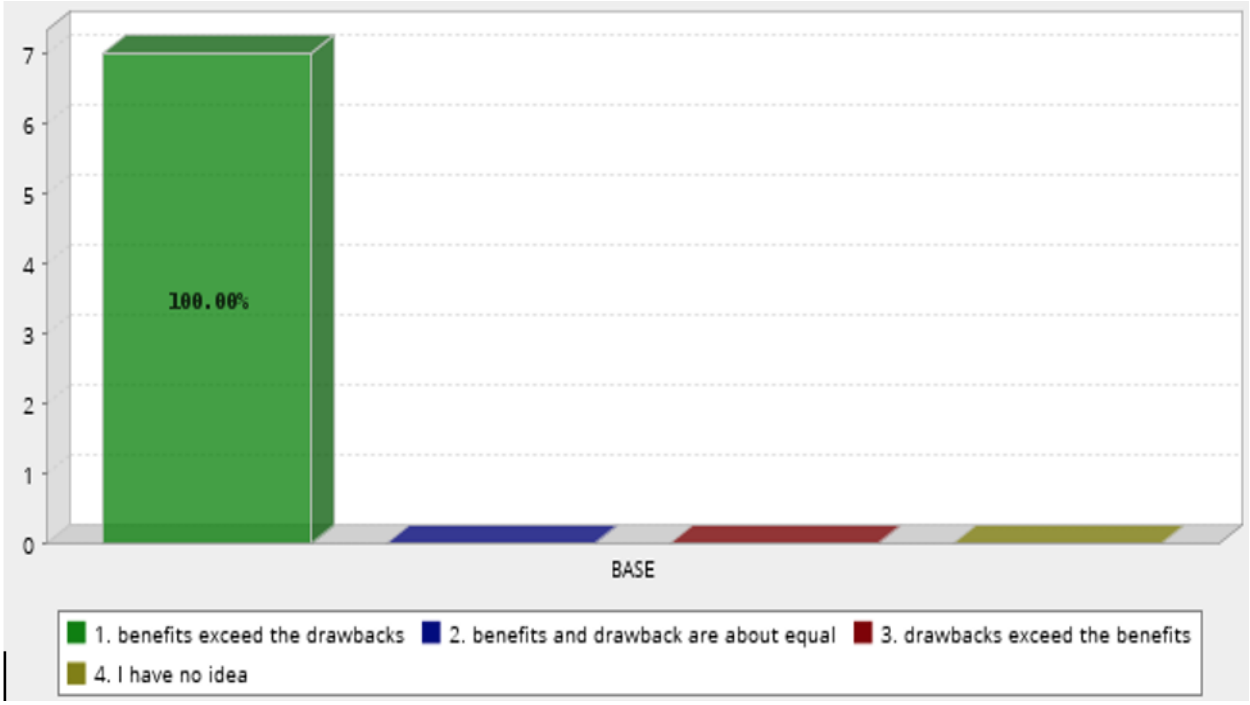


Figure 8

Benefits Compared to the Drawbacks of the PDMP

Q3. In general (not just for you or your practice) - so far, how have the benefits of the PDMP compared to the drawbacks?



Q4. In general (not just for you or your practice), how useful has the PDMP been so far? How useful is the PDMP?

Figure 9

Monitoring Patient's-Controlled Substance Prescriptions

Q4a. . . . in helping clinicians and pharmacies to monitor patients'-controlled substance prescriptions?

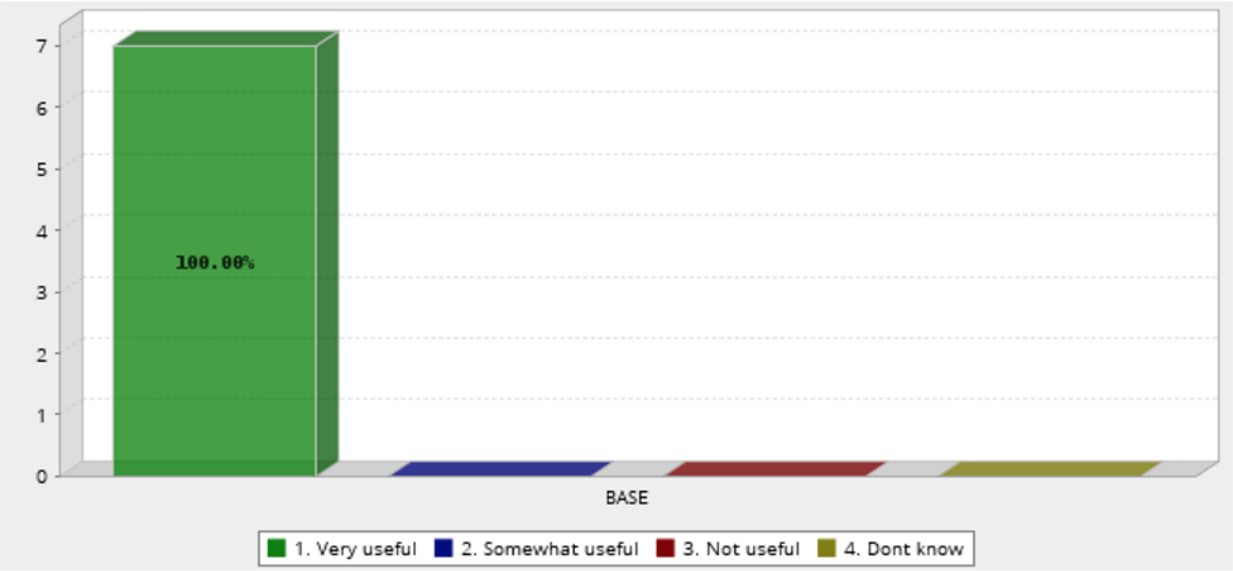


Figure 10

Control Patient Doctor Shopping

Q4b. . . . in helping to control doctor shopping by patients seeking to access or abuse controlled substances?

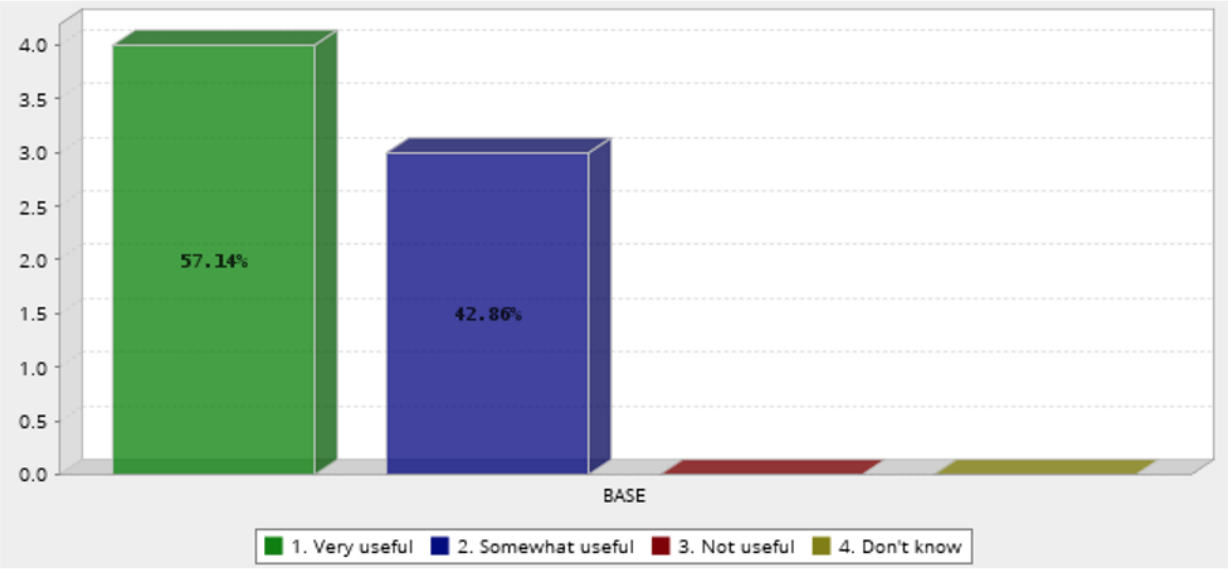
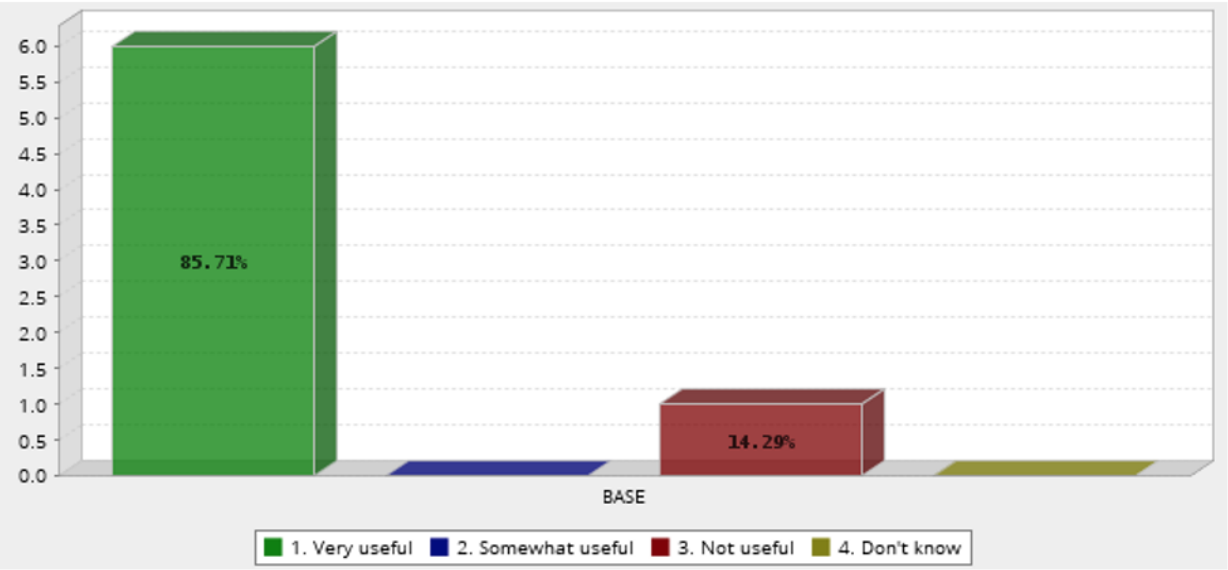


Figure 11

Provider Communication

Q4c. . . . in helping providers consult with each other about possible prescription abuse by patients?



Q5. Considering this program, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements. *Please choose one answer per statement.

Figure 12

Management of Patient Prescriptions

Q5a. This program is likely to improve management of patient prescriptions for controlled substances.

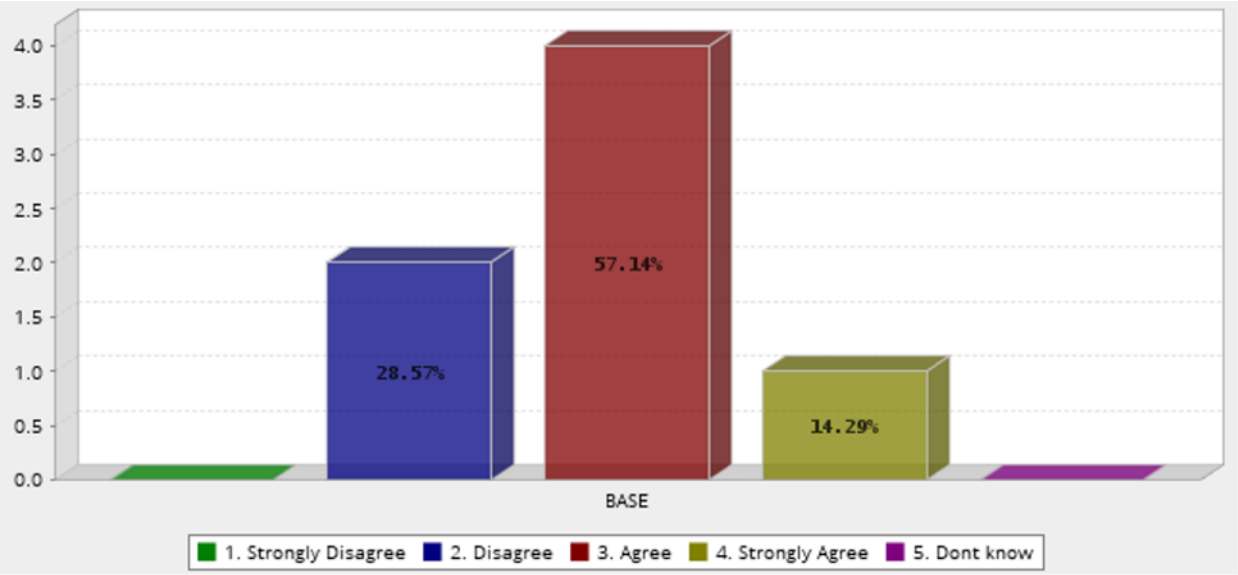


Figure 13

Registering and Accessing the PDMP

Q5b. Over time, I think most providers and pharmacists will be interested in registering to access and use this data system.

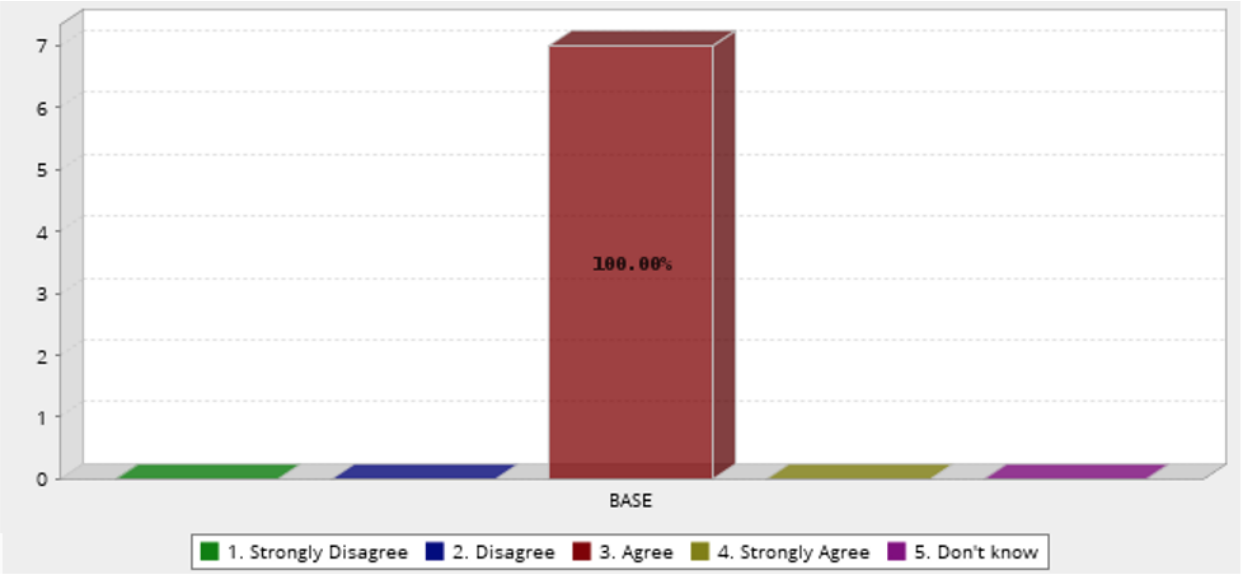


Figure 14

Increase Provider Communication

Q5c. This program will likely increase communication between providers.

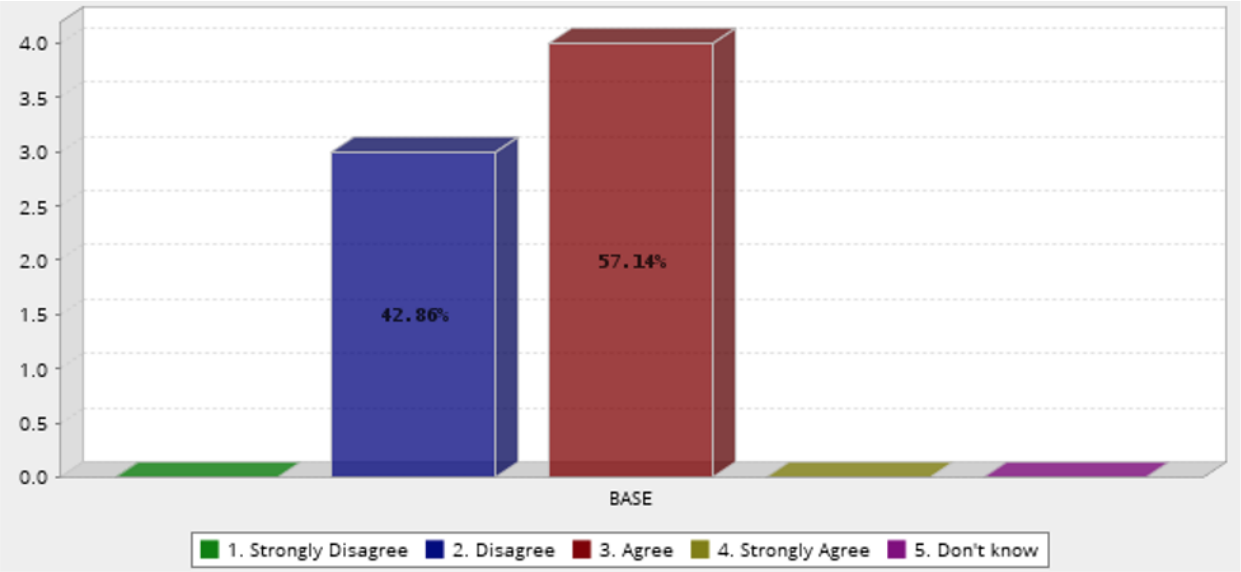


Figure 15

PDMP Impact

Q5d. This prescription monitoring program will not have much impact.

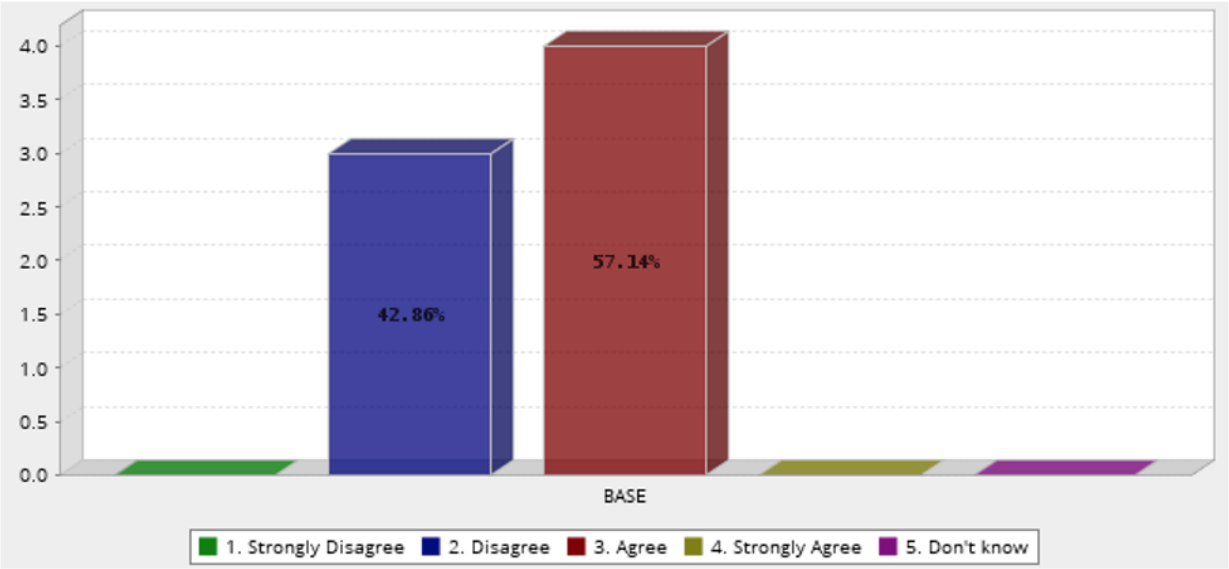
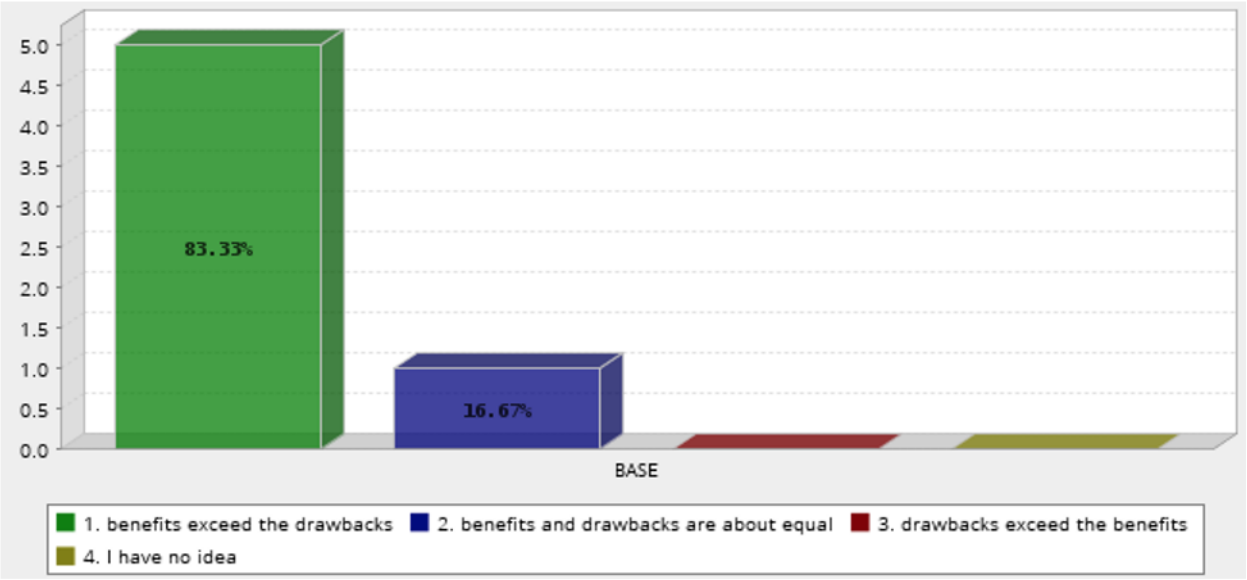


Figure 16

Benefits and Drawbacks of the PDMP

Q6. In general (not just for you or your practice) - so far, how have the benefits of the PDMP compared to the drawbacks?



Q.7 In general (not just for you or your practice), how useful has the PDMP been so far? How useful is the PDMP?

Figure 17

Monitoring Patient's-Controlled Substance Prescriptions

Q7a. . . . in helping clinicians and pharmacies to monitor patients'-controlled substance prescriptions?

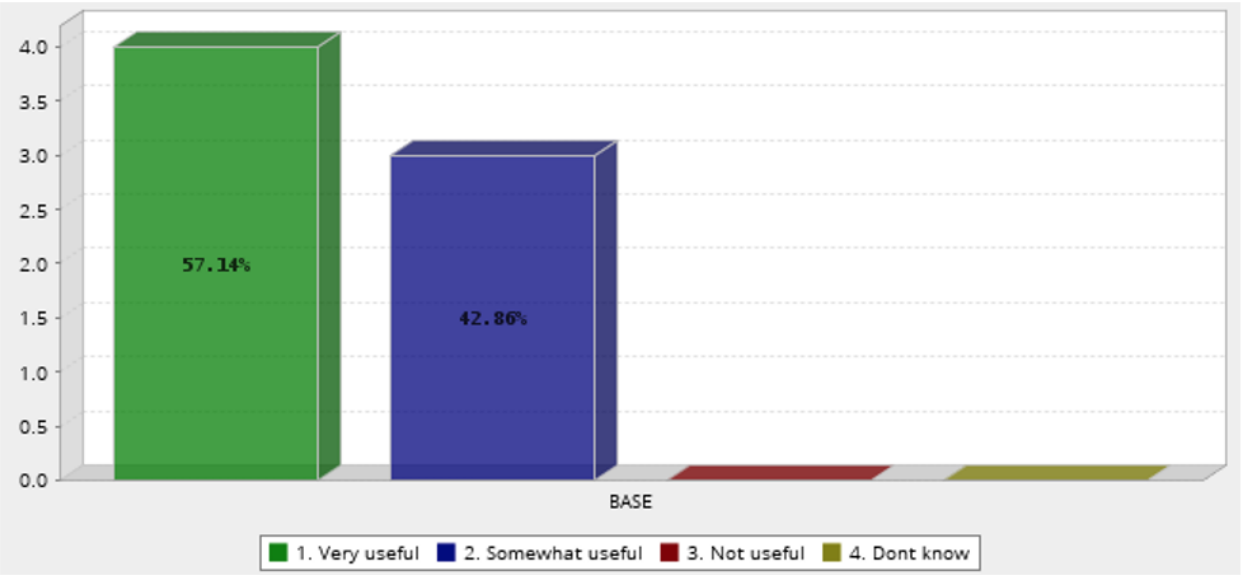


Figure 18

Control Doctor Shopping

Q7b. . . . in helping to control doctor shopping by patients seeking to access or abuse controlled substances?

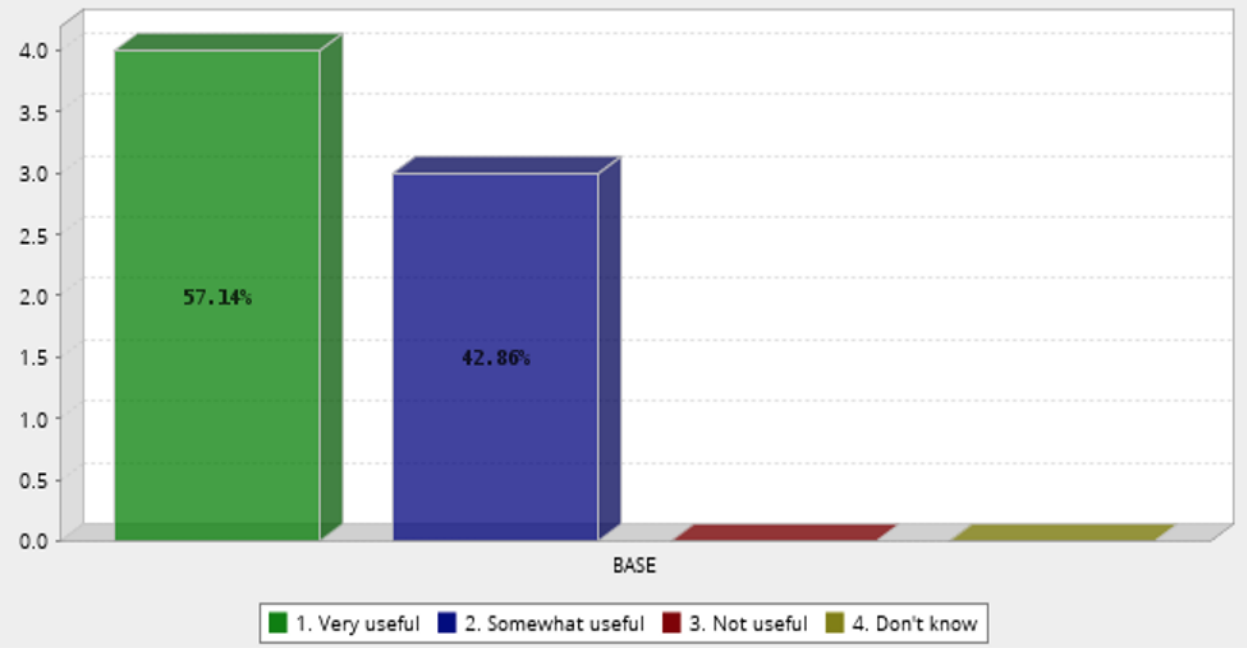


Figure 19

Provider Consults

Q7c. . . . in helping providers consult with each other about possible prescription abuse by patients?

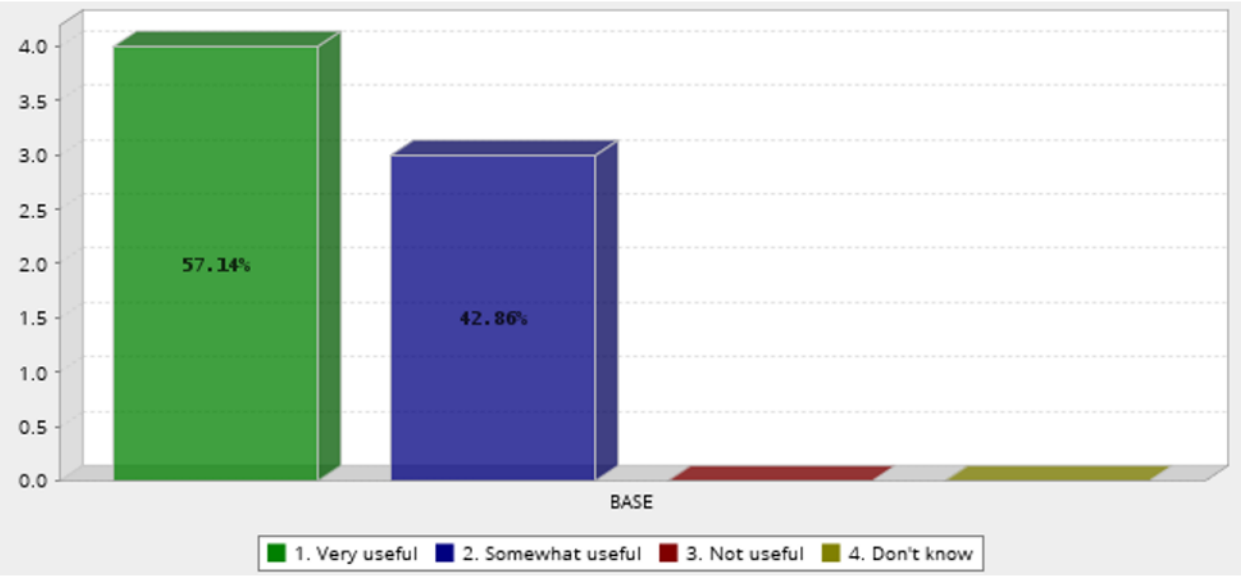


Figure 20

Use of the PDMP

Q9. How would you characterize your use of the PDMP system?

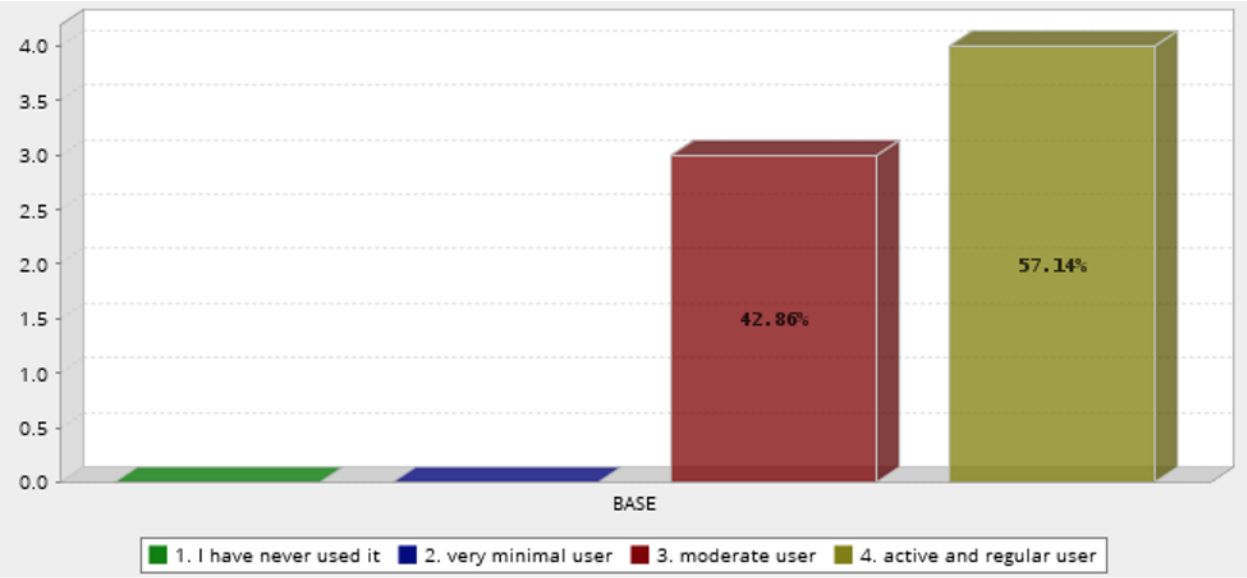


Figure 21

Ease of Patient Access

Q11. How easy has it been to access patient information?

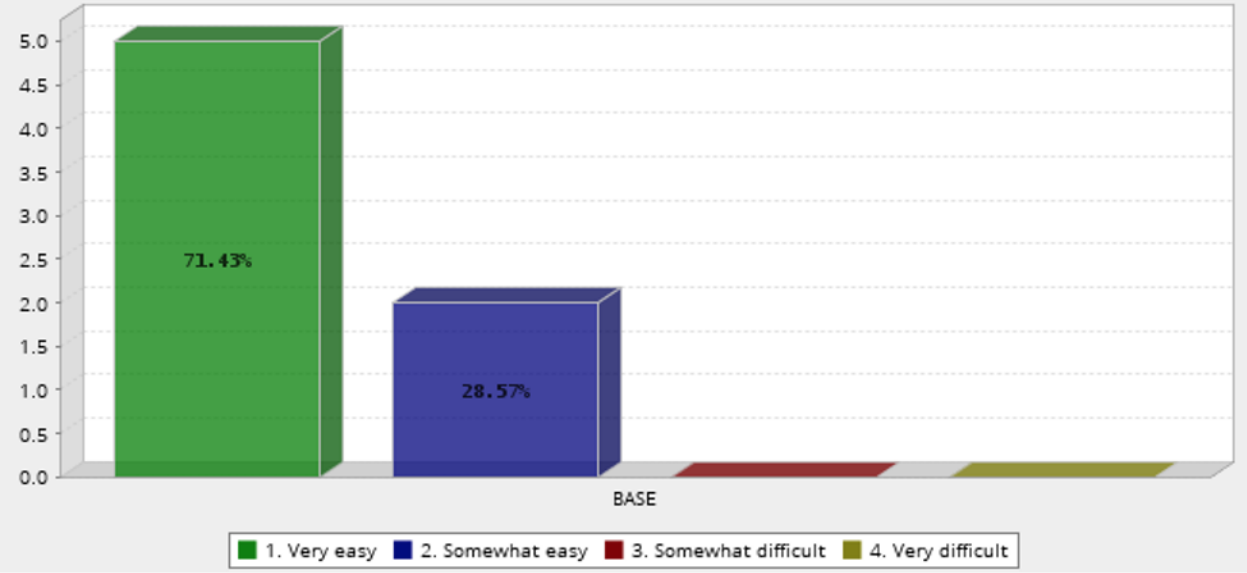


Figure 22

Asscessed Patients via PDMP

Q12. In the last 30 days, about how many separate patients have you accessed the PDMP to monitor or check on prescription medication?

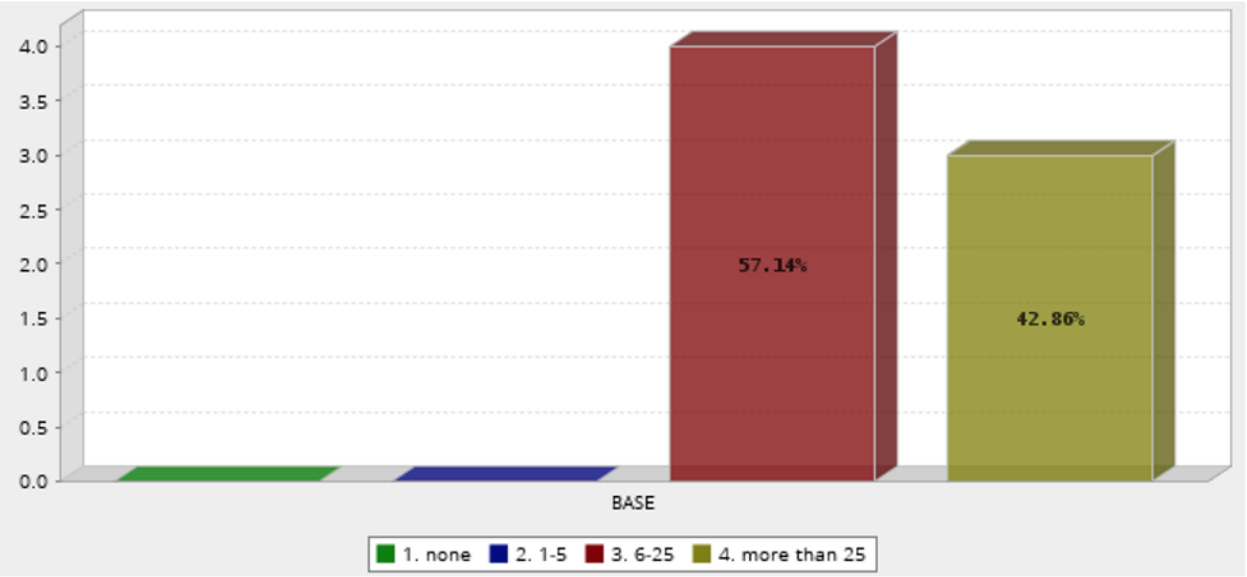
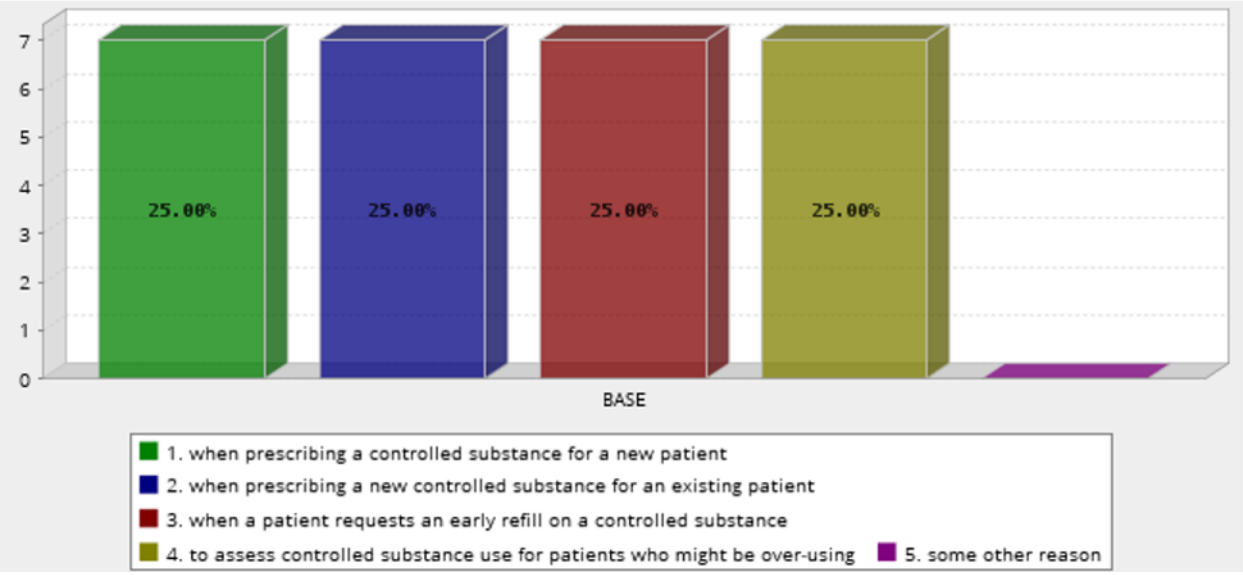


Figure 23

Reasons for Accessing the PDMP

Q13. In the past 30 days, for which of the following reasons have you used the PDMP system?

*Please check all that apply.



Q14. Some providers have reasons for not using the PDMP system more often. How much do each of the following barriers keep you from using the system more?

Figure 24

Barriers for Not Using the PDMP

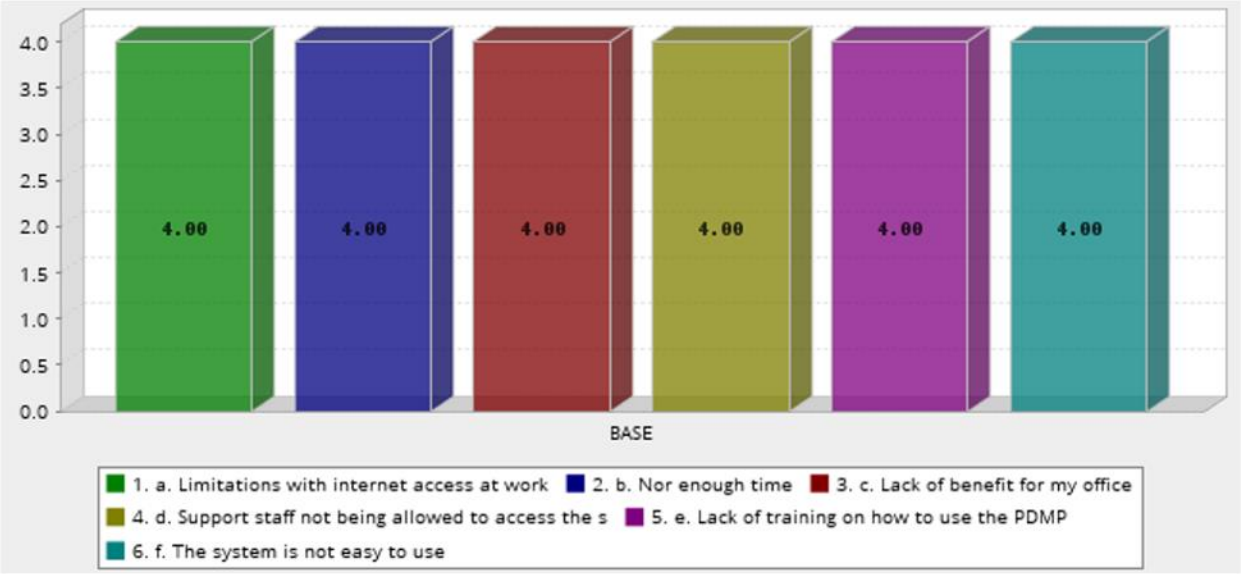


Figure 25

Internet Limiting PDMP Access

Q14. Limitations with internet access at work

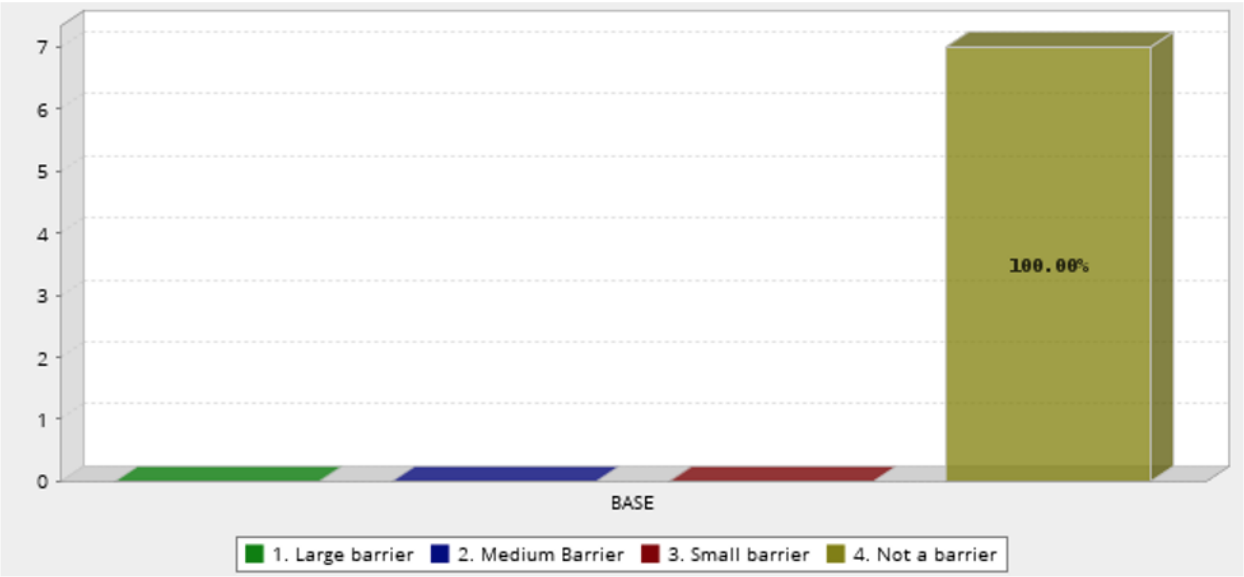


Figure 26

Limitations of Time

Q14b. Nor enough time

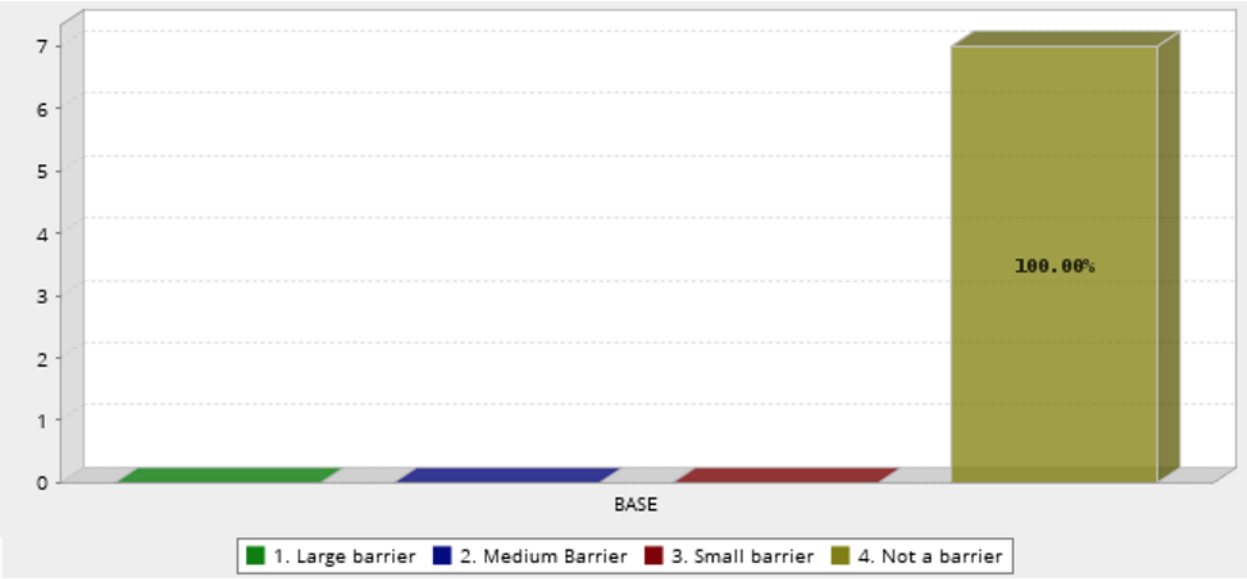


Figure 27

Nonbeneficial to Office

Q14c. Lack of benefit for my office

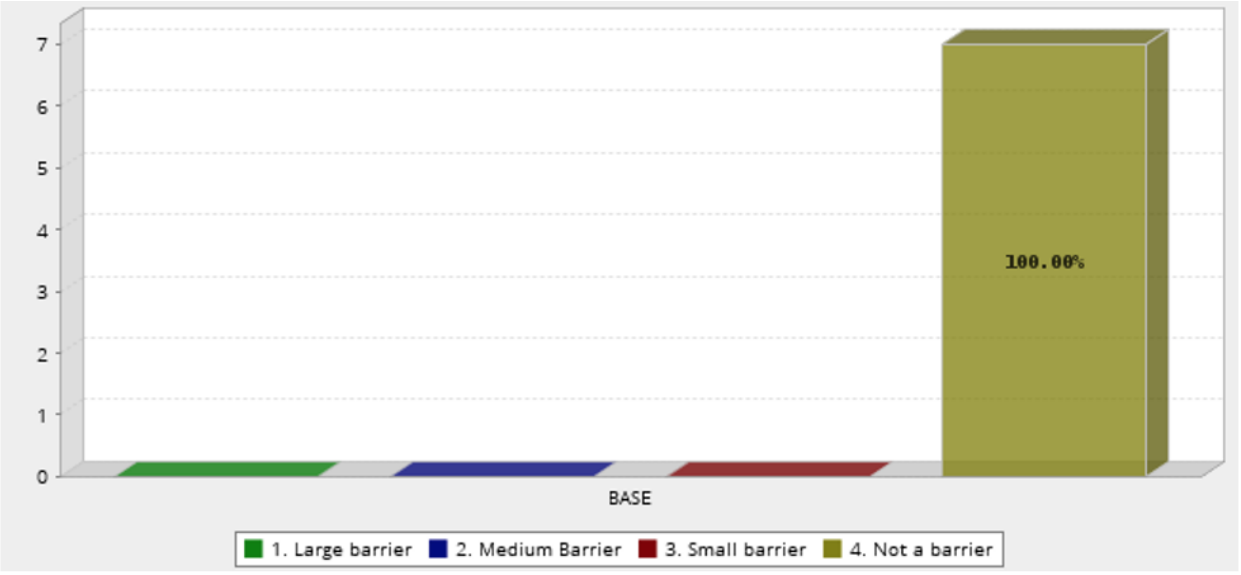


Figure 28

Support Staff Has No Access

Q14d. Support staff not being allowed to access the system under my account

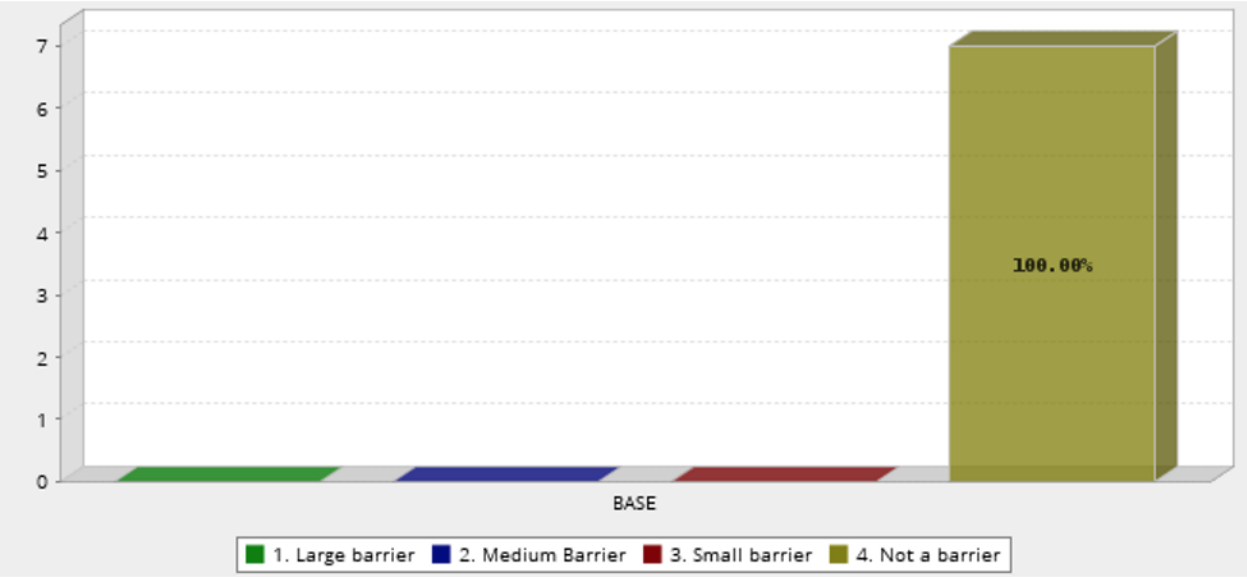


Figure 29

Lack of Training

Q14e. Lack of training on how to use the PDMP system.

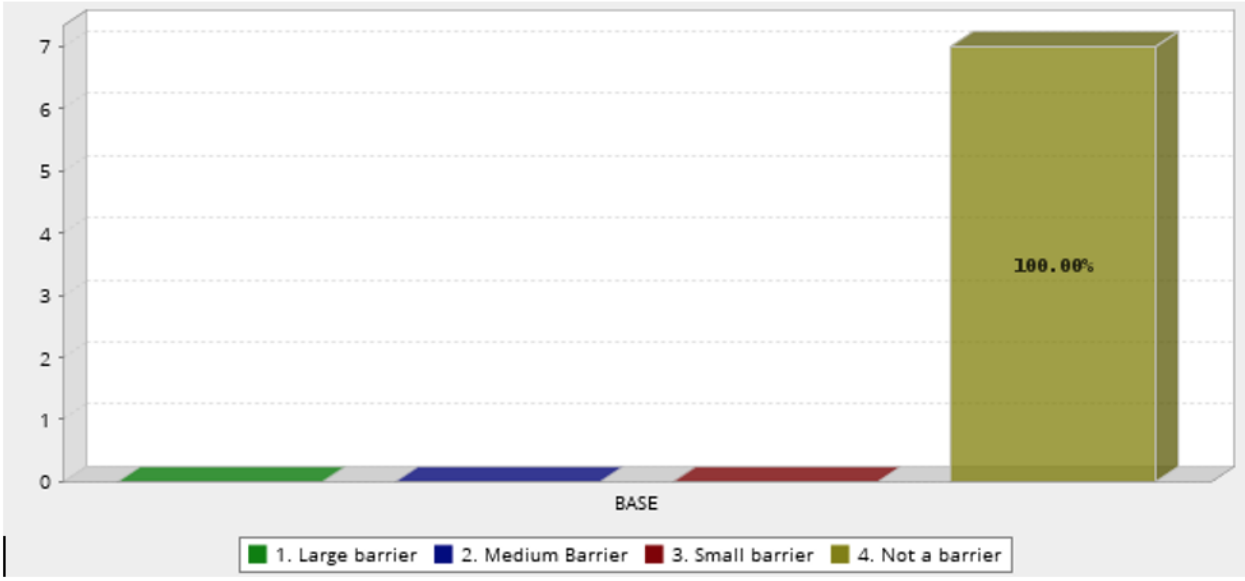


Figure 30

Difficulty Using PDMP

Q14f. The system is not easy to use.

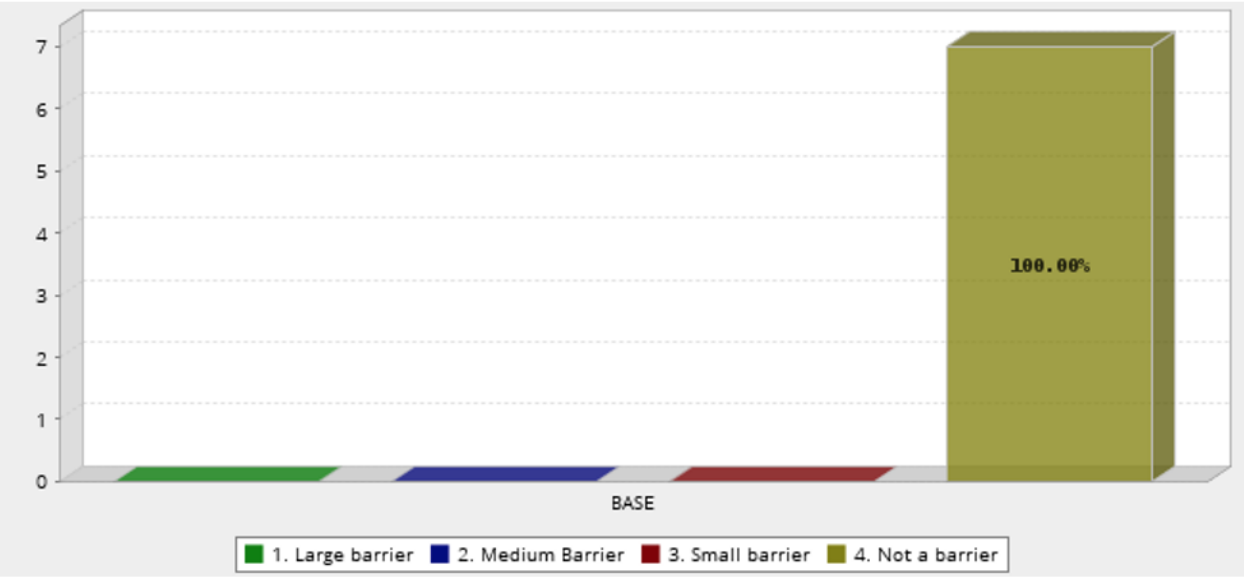
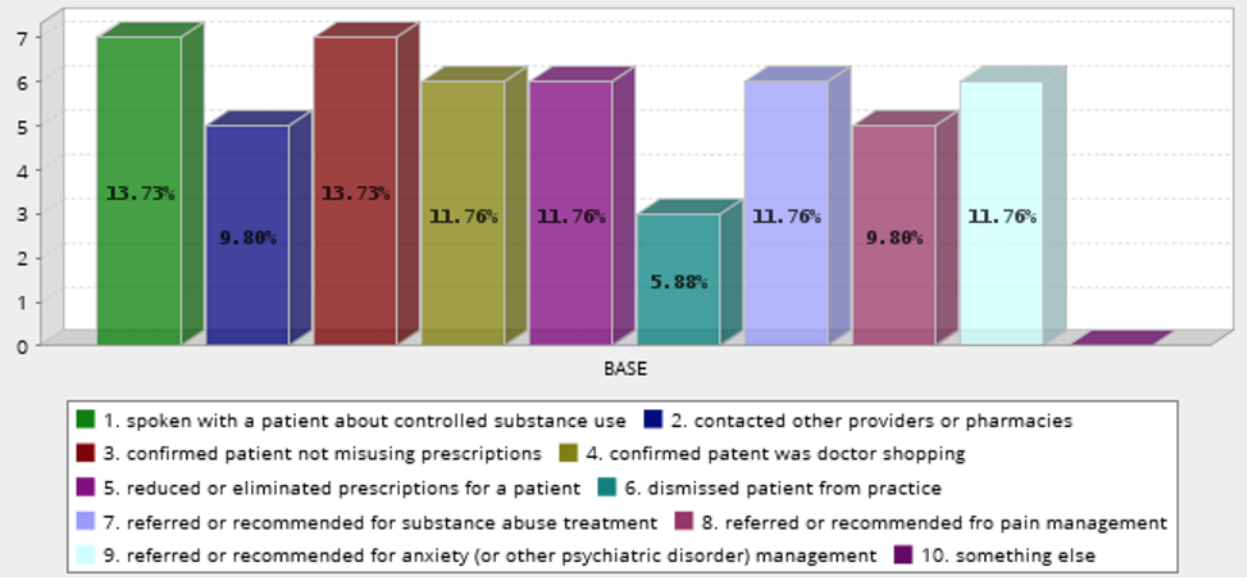


Figure 31

Actions Resulting From Utilization of the PDMP

Q15. In the past 30 days, which of the following actions have you taken as a result of using the PDMP system to monitor prescription medications for your patients? *Please check all that apply.



Q16. As a result of using the PDMP system, do you communicate more with any of the following groups?

Figure 32

Who Do You Communicate More?

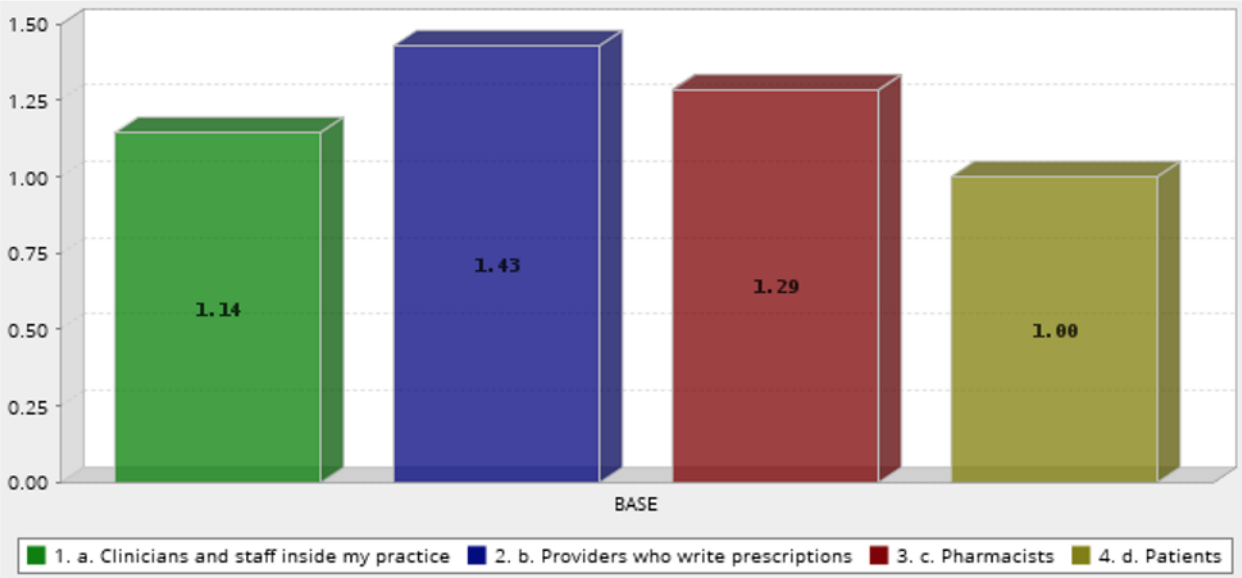


Figure 33

Number of Clinicians in the Office

Q16a. Clinicians and staff inside my practice.

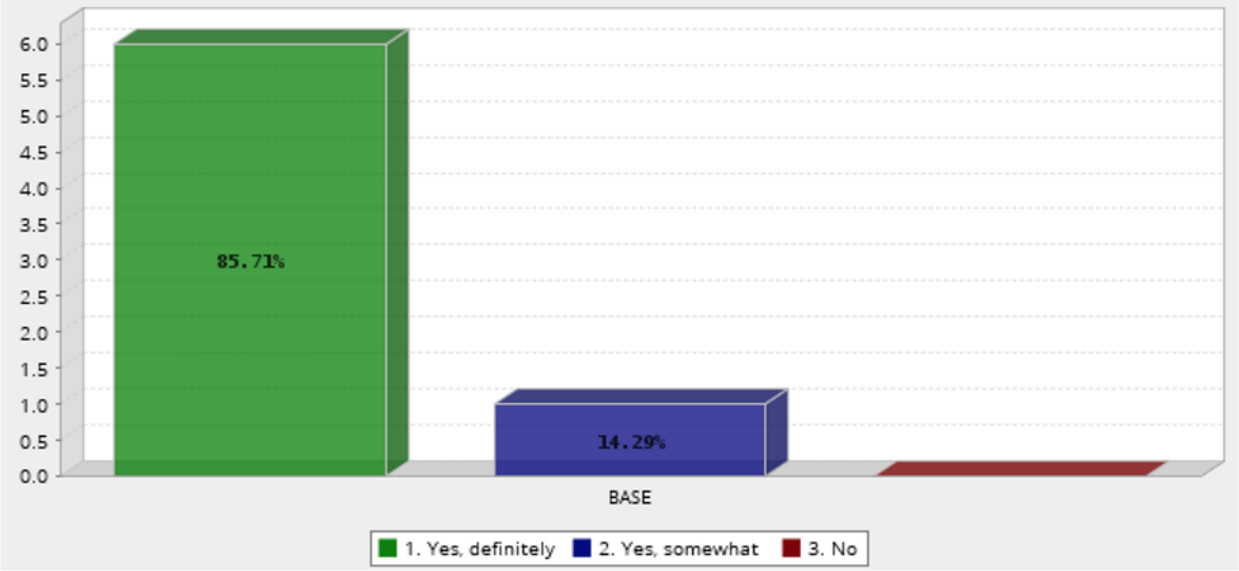


Figure 34

Providers Writing Prescriptions

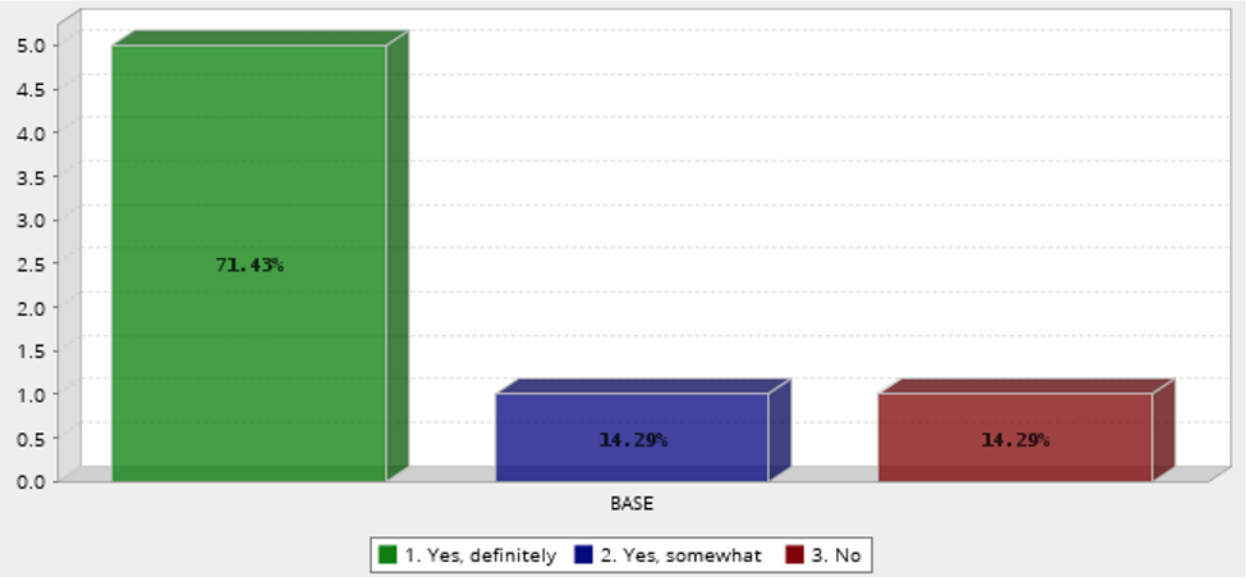


Figure 35

Pharmacists

Q16c. Pharmacists

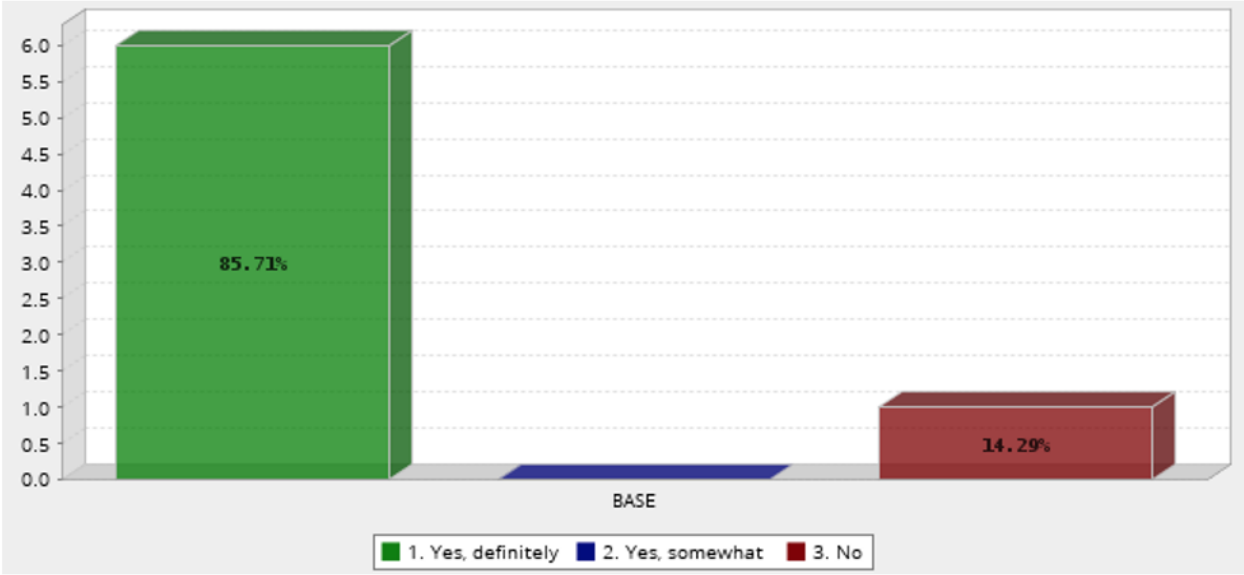


Figure 36

Patients

Q16d. Patients

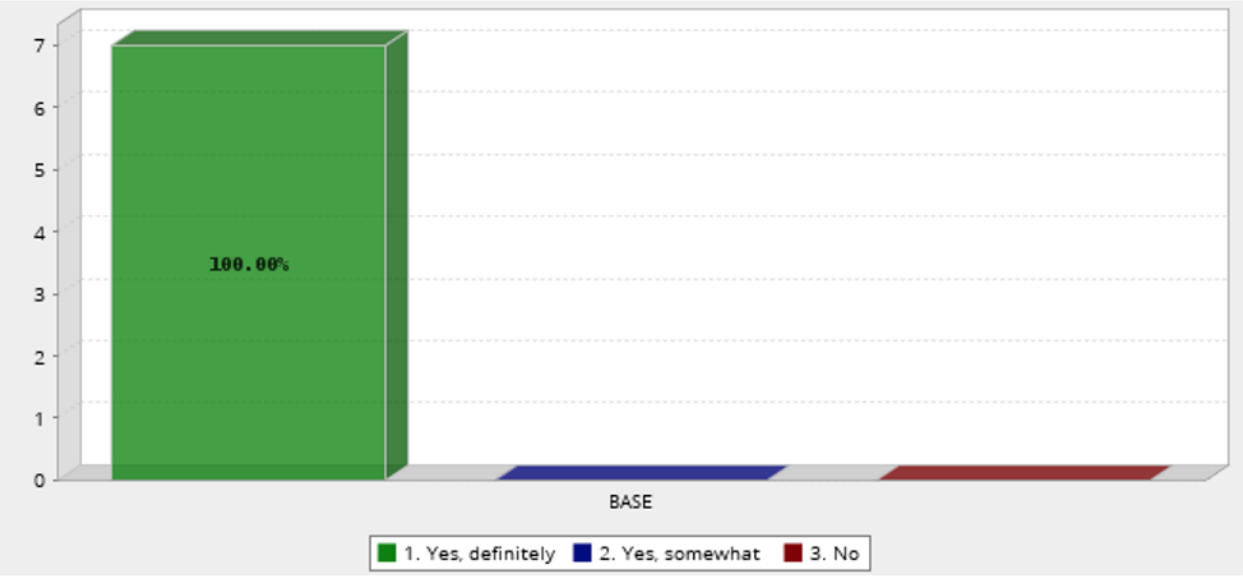
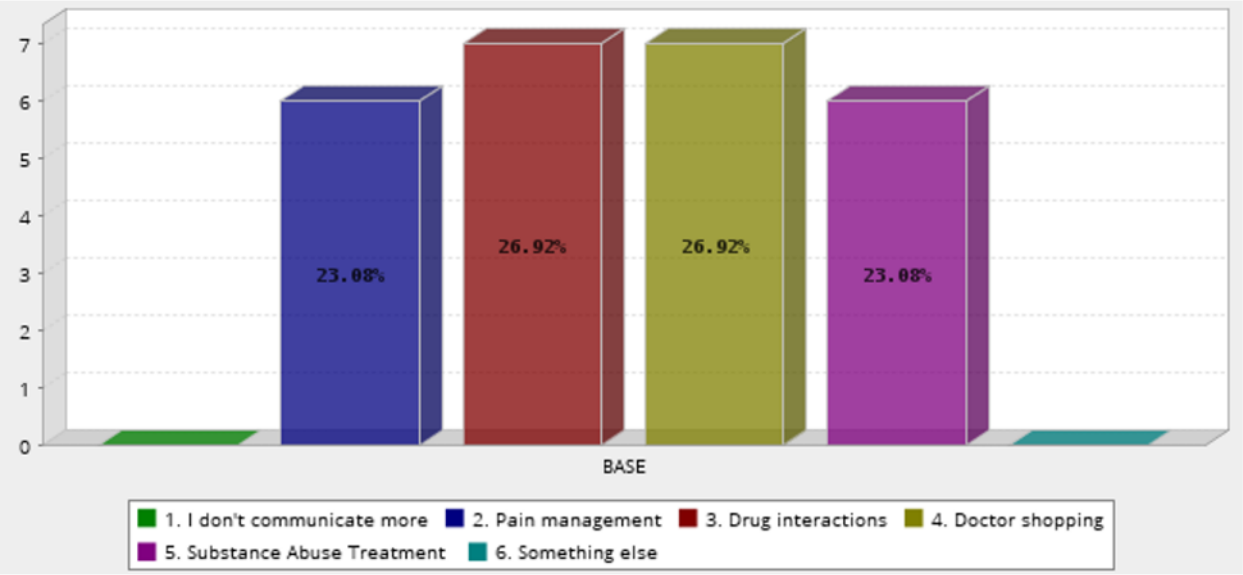


Figure 37

Topics Most Communicated On

Q17. About which of the following topics do you communicate more with any of these groups?

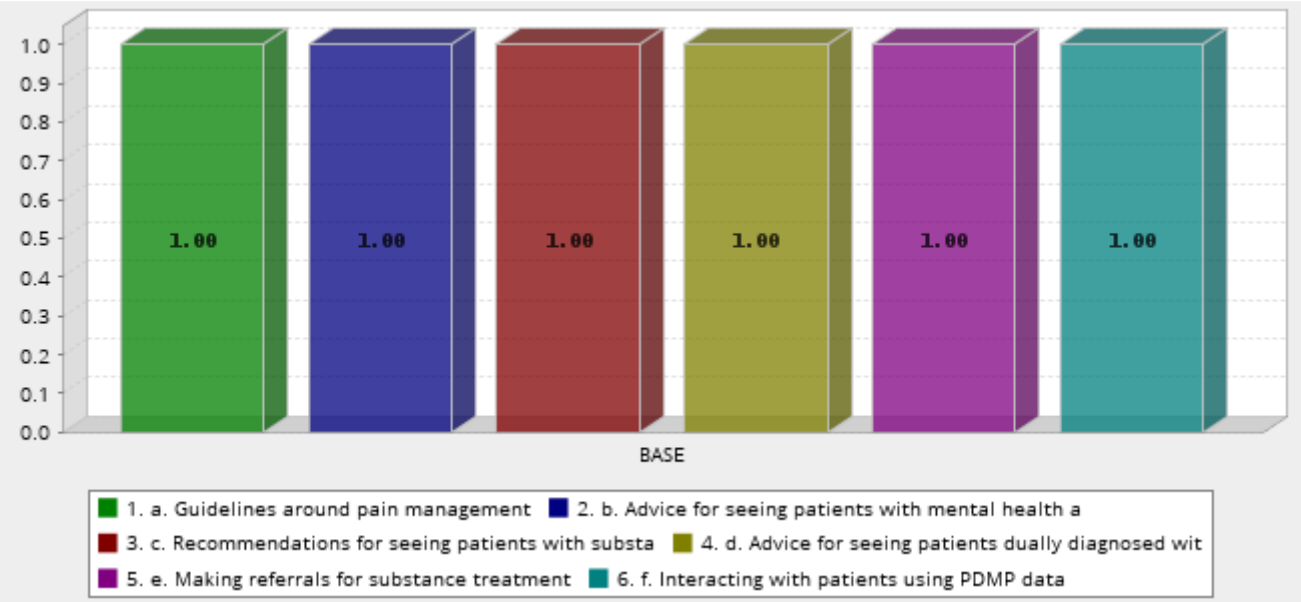
*Please check all that apply.



Q18. How useful would any of the following categories be as additional resources on the PDMP website? *Please check all that apply.

Figure 38

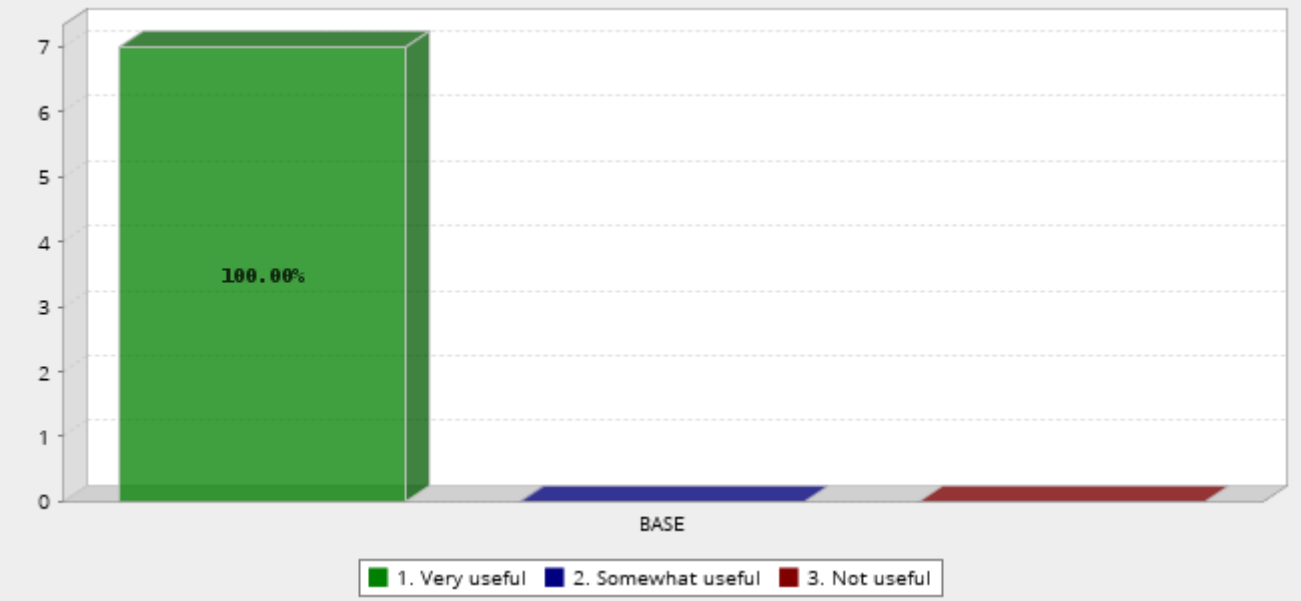
Additional Resources



Q18a. Guidelines around pain management.

Figure 39

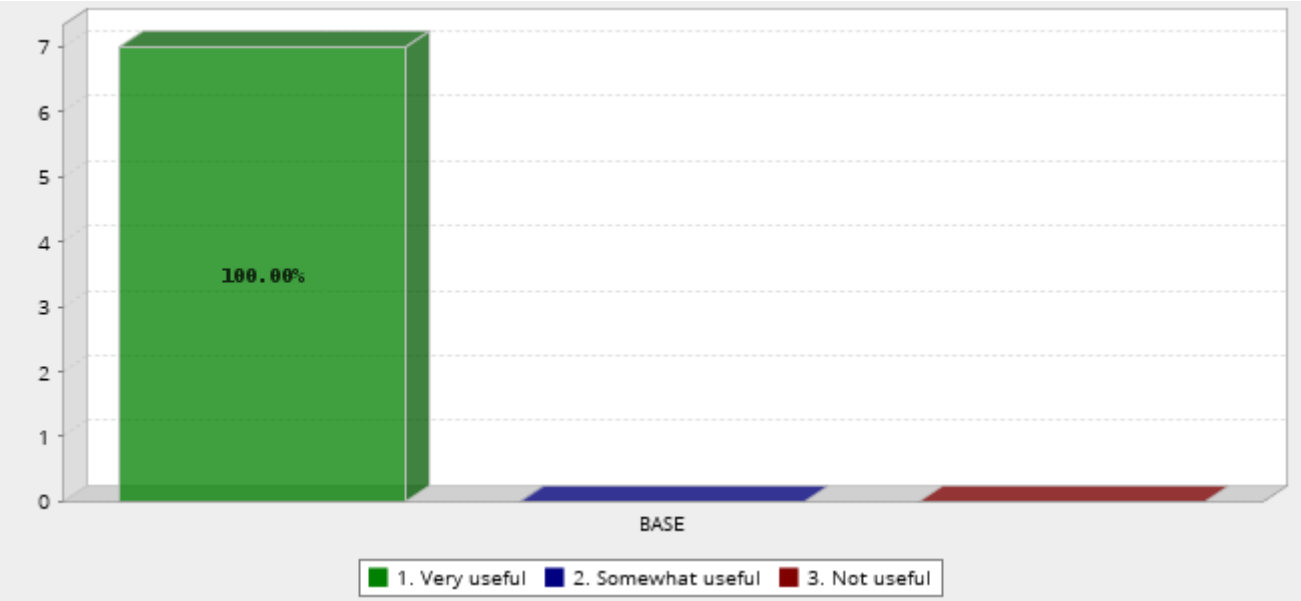
Guidelines Around Pain Management



Q18b. Advice for seeing patients with mental health and substance abuse issues.

Figure 40

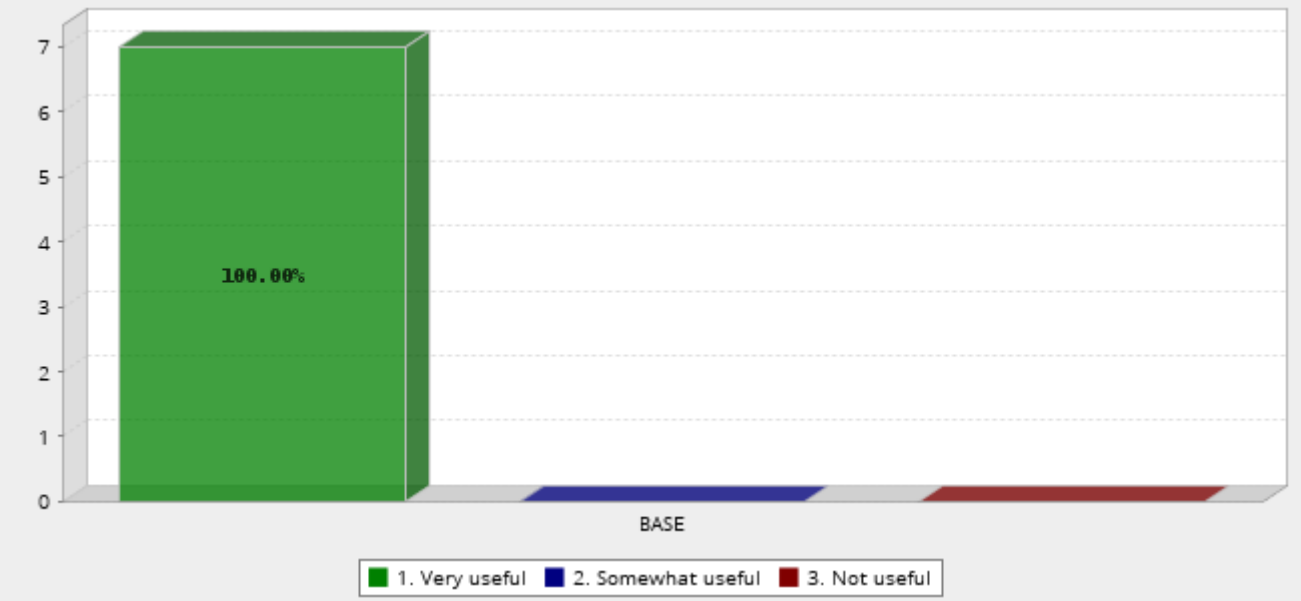
Advice for Patients With Mental Health and Substance Abuse Disorders



Q18c. Recommendations for seeing patients with substance abuse problems.

Figure 41

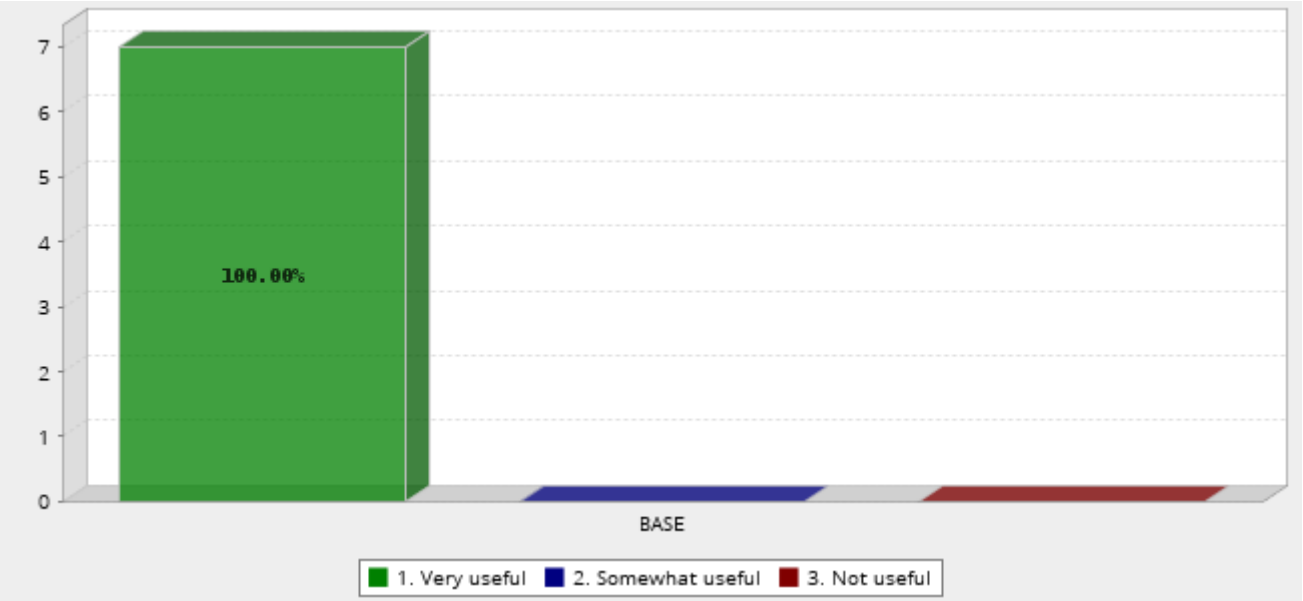
Recommendations for Seeing Patients With Mental Health and Substance Abuse Disorders



Q18d. Advice for seeing patients dually diagnosed with mental health and substance abuse issues

Figure 42

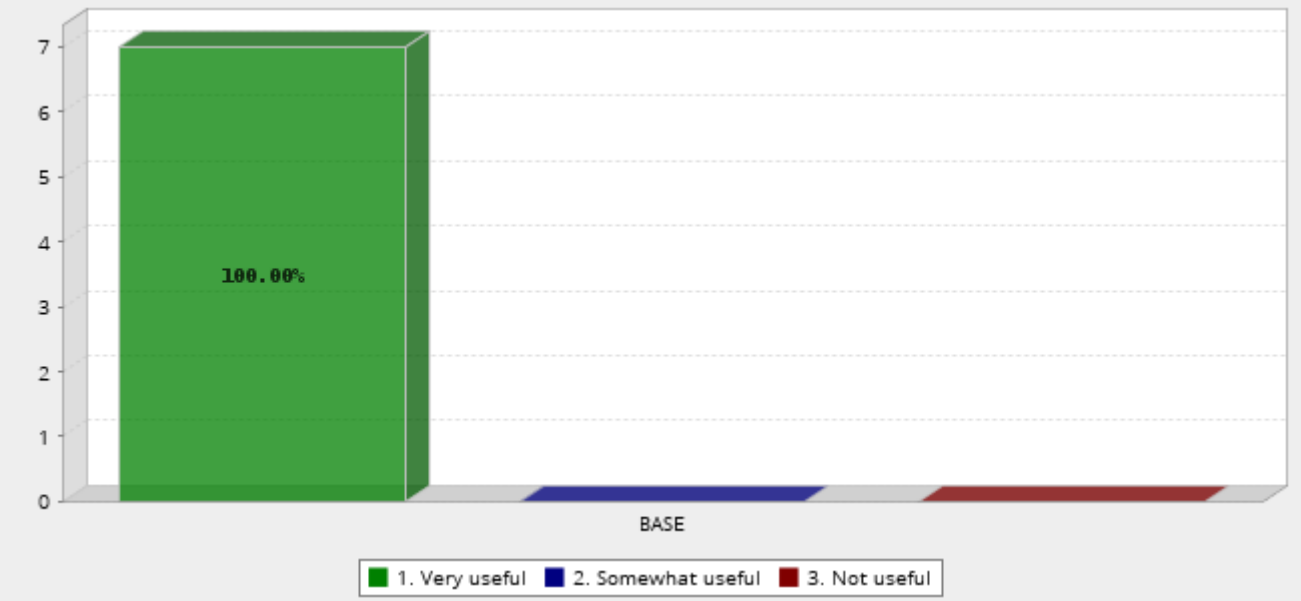
Patients With Dual Mental Health and Substance Abuse Disorders



Q18e. Making referrals for substance treatment.

Figure 43

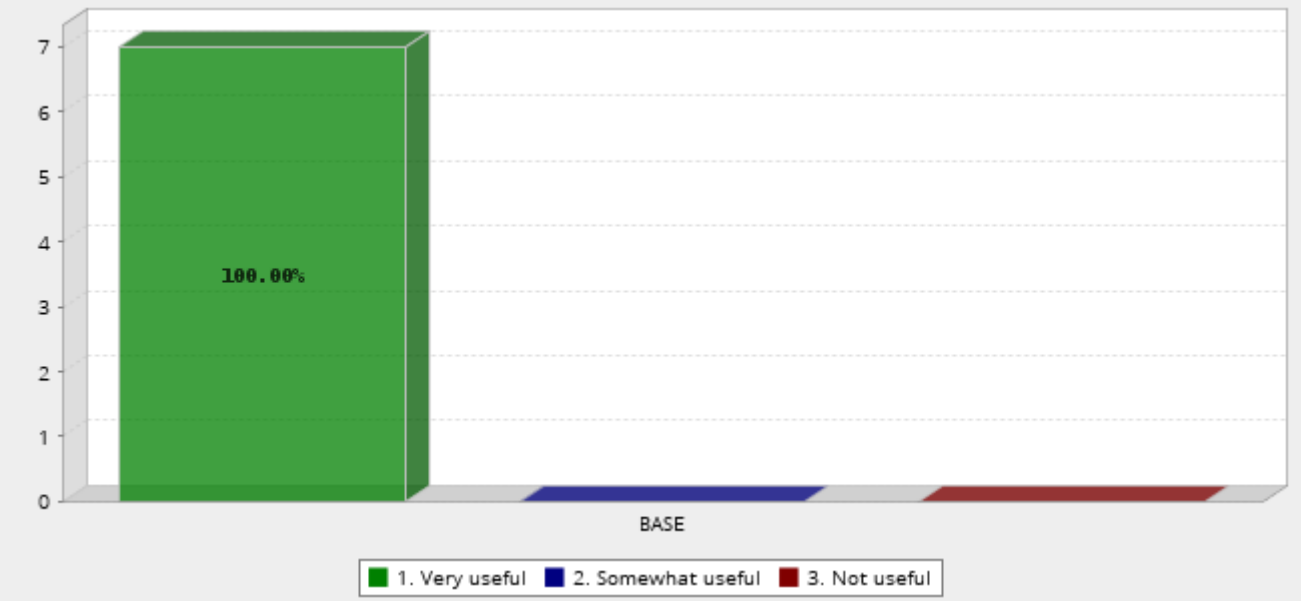
Referrals for Substance Abuse



Q18f. Interacting with patients using PDMP data.

Figure 44

Patient Interaction



Data Analysis Summary

Upon reviewing the data collected, 100% of the participants admitted to having had knowledge of the PDMP. In terms of the likelihood of the PDMP improving the management of controlled substances, 50% of the participants agreed there would be some improvement whereas, 50% of the participants disagreed. Yet, 70% of the participants agreed providers and pharmacists would be interested in registering, accessing, and using the PDMP. Fifty percent of the participants felt that the use of the data system would increase communication between providers. Eighty-five percent of the participants agreed its use would not impact providers' patient management.

In terms of utilization, 100% of the participants agreed in the use of the PDMP and concluded its benefits outweighed its drawback. They also agreed the PDMP would help providers and pharmacists to monitor the patients'-controlled substance prescriptions. Fifty-seven percent agreed the PDMP would help to control doctor shopping by patients seeking to access or abuse controlled substances and 42% somewhat agreed. Eighty-five percent considered the PDMP very useful in helping providers consult with each other about possible prescription abuse.

The goals of the PDMP are to identify, educate, provide resources, and prevent drug diversion (SAMHSA, 2017). Based on these goals, 57% of the participants agree the program is likely to improve management of patient prescriptions for controlled substances. One-hundred percent of the participants agreed most providers and pharmacists will be interested in registering to access and use this data system. Again, the participants were divided on the ability of its use to increase communication between providers. Fifty-seven percent agreed its utilization would increase communication and approximately 43% disagreed. Fifty-seven percent of the

participants also felt the prescription monitoring program will not have much impact and approximately 43% of the participants disagreed.

In general, approximately 83% of the participants agreed the benefits of the PDMP exceeded its drawbacks. Fifty-seven percent agreed the PDMP would help clinicians and pharmacists to monitor patient's-controlled substance prescriptions and 47% agreed that it would somewhat help. In terms of the PDMP helping to control doctor shopping by patients seeking to access or abuse controlled substances, 57% of the participants agreed and approximately 43% deemed it would somewhat help.

The participants in this survey were providers who are registered to access the PDMP database. Approximately 86% of the participants have utilized the database for more than two months. Fifty-seven percent of the participants were recorded as moderate users and approximately 43% were active or regular users. In evaluating the ease of the use of the PDMP, the participants found the database very easy to use, easy to access patient information, and did not experience any limitations in accessing the database.

In utilizing the PDMP, the participants reported an increase in patient education related to controlled substance use, confirmation of patients not misusing prescriptions, confirmation of patients' doctor shopping, reduction or elimination of prescriptions for patients, and referrals to other resources. Such resources include: pain management, substance abuse, and anxiety management. As a result of the PDMP utilization, the participants not only reported an increase of communication between providers, medical staff, pharmacies and patients, but, found themselves consulting more about pain management, drug interactions, doctor shopping, and substance abuse treatment. The participants also gave recommendation for additional resources to be available on the site during treatment. Such resources were to include guidelines around

pain management, advice for seeing patients with mental health and substance abuse issues, recommendations for seeing patients with substance abuse problems, advice for seeing patients dually diagnosed with mental health and substance abuse issues, making referrals for substance treatment, and interacting with patients using PDMP data.

Limitations of the Project

The survey results have shown that incorporating the PDMP in the clinical decision-making process, has led to a decrease in providers coprescribing opioids and benzodiazepines. The incorporation of the PDMP and clinical decision-making has also led providers to modify their treatment plans to include alternative treatments. Such as, therapy, meditation, and exercise. Thus, aiding in lowering the threshold for patient misuse and abuse of opioids and benzodiazepines, and the ability to doctor shop.

Although, the survey results have been in alignment with the current literature and the recommended changes in the treatment plans for providers' prescribing opioids and benzodiazepines, there were limitations that may or may not have affected the survey findings. The limitations that were founded in this project were:

1. The survey participation was limited. Thus, there was a small number of people representing a larger population. There is the consideration that if there were more participation, would the survey results still have consistent with the current literature.
2. Although the data were self-reported and anonymous, they may have been some inaccuracy in answering the questions as to appear compliant or due to unknown self-biases.

Interpretation and Inference of the Findings

According to the data obtained and analyzed, the PDMP is a beneficial tool that assists providers in their prescribing practices. The database was shown not be difficult to access, there were no limitations preventing registration or utilization, the benefit of the PDMP out ways the risks, it helped to monitor controlled substances, its use, and doctor shopping, and helped to improve communication with staff, providers, and pharmacists. In review of the goals and management of patient substance use, providers are not convinced the PDMP will improve the management of patient substance use, will not have an impact on the patient management, and will not increase communication between providers regarding management of controlled substance use.

Although, the results of the data analysis obtained for this project was inconclusive due to having too small of a sample population, the lack of participation, the data were based solely on the pretest survey, and insufficient data obtained for comparison, its findings were supported in a report released by the American Medical Association (AMA). The AMA Opioid Task Force released a report depicting an increase in the fatalities involving illicit opioids despite a reduction in opioid prescribing and an increase use of the state prescription drug monitoring program (AMA, 2020). Mann (2017) explained this phenomenon as a result of health care workers are actually writing prescriptions for more opioid pills because of time constraints, that is because government regulations have made prescribing more complicated and time-consuming. Thus, giving validity to this project's PICO question, How does accessing the Prescription Drug Monitoring Program (PDMP) prior to prescribing treatment compared to not accessing the PDMP when prescribing opioids and benzodiazepines decrease the incidents of the coprescribing of prescription medications?

According to the CDC (2020a), the clinical guidelines supporting the utilization of the PDMP to access a patient's history of controlled substance use prior to prescribing, allows providers to improve the way [controlled substances] are prescribed, causes a reduction in the number of people who misuse, abuse, or overdose from them, while making sure patients have access to safe, effective management. Yet, over the past few decades, the cultural shift of medicine and doctors' over dependence on opioids to manage chronic pain has contributed to the opioid epidemic (Gorman & Gorman, 2018). The misconception that "all pain is treatable has led to the expectation that a patient experiencing more than mild discomfort should be treated with pills and that the goal is to be completely pain -free" (Gorman & Gorman, 2018, p. 1). Thus, the theoretical framework, the middle-range theory of unpleasant symptoms (TOUS) is extremely important in the provider's prescribing practices.

The TOUS is a biofeedback theory which allows for one or more symptoms to exacerbate effects on performance as well as to provide a reciprocal influence on the physiologic, psychological, and situational factors (Myers, 2009). In this theory, any alterations in symptom quality, intensity, timing, and distress via physiologic, situational, or psychological factors will alter patient outcomes (Nguyen et al., 2017). As aforementioned, it is imperative for healthcare providers to understand and "consider factors that might influence more than one symptom and the ways in which symptoms interact with each other" (Lenz et al., 1997) in order guide and improve the decision-making processes and to provide better evidenced-based care.

The Harvard Medical School illustrates a great example of the TOUS. Pain, a symptom most often felt, in the present of depression or anxiety makes treatment much more difficult. People suffering from depression tend to experience more severe and longer lasting pain than most people (Harvard Medical School, 2020).

In many disease states, such as fibromyalgia, irritable bowel syndrome, lower back pain, headaches, and nerve pain, symptoms of anxiety, depression, and pain, have a tendency to overlap. Often, these patients are referred and may present with symptoms of psychological distress. Approximately two-thirds of the symptoms of psychological stress has been attributed to anxiety and 65% of the patient that seek help for depression have reported at least one type of pain symptom. Therefore, psychiatric disorders not only contribute to the intensity of pain but to the increased risk of disability. According to researchers, pain shares some of the same biological mechanisms as anxiety and depression. Researchers have also found serotonin and norepinephrine, two neurotransmitters that play a role in depression and anxiety, plays a role in sending pain signals not only to the brain but the nervous system as well (Harvard Medical School, 2020).

In treating patients where pain overlies anxiety and depression, treatment can be very difficult and challenging (Harvard Medical School, 2020). For example, a patient with fibromyalgia, a chronic disease, can cause chronic pain resulting in chronic depression. Likewise, patients with major depression may feel physical pain (Harvard Medical School, 2020). Therefore, as previously stated, the utilization of TOUS should guide healthcare providers to ask questions, such as “What is the symptom experience like for you?” (i.e., quality, intensity, timing, and distress); “Are there other symptoms that occur when you are having this particular symptom?”; “What contributes to making the symptom better or worse?” (i.e., physiological, psychological, and situational factors); or “What effect does the symptom have on your everyday life?” (i.e., performance; Nguyen et al., 2017, p. 5) when assessing patients. Upon analyzing the factors that might influence more than one symptom and the ways in which symptoms interact

with each other should assist in guiding and improving healthcare providers' decision-making processes to provide better evidenced-based care (Lenz et al., 1997).

Although a multitude of guidelines and various frameworks have been developed and presented to the medical community to assist in rendering more evidenced based treatments, healthcare providers continue to prescribe large quantities of [controlled substances]. Yet, despite the research and warnings, healthcare providers are still aggressively prescribing opioids knowing it's not the safest or most effective treatment (Mann, 2017). Ultimately, focusing on pain will mask both the clinician's and patient's awareness that a psychiatric disorder is present (Harvard Medical School, 2020).

According to the Harvard Medical School (2020), three treatment plans for patients suffering from pain, anxiety, and depression are:

1. **Double-duty psychotherapy**. Double-duty psychotherapy consists of:

I. Cognitive behavioral therapy (CBT). In CBT, the thoughts, feelings, and sensations are all related. Therapists can utilize CBT to assist patients in learning to develop coping skills. These coping skills with enable the patient to manage their pain instead of having a feeling of victimization.

II. Relaxation training. Patients can be taught techniques (progressive muscle relaxation, yoga, and mindfulness training) to help relax and reduce their stress response. Stress can exacerbate pain, anxiety, and depression.

III. Hypnosis. Through hypnosis, the clinician can the patient with positive affirmations and suggestions (e.g., the pain symptoms will improve).

IV. Exercise. Regular exercise improves mood and decreases anxiety.

2. **Double-duty medications**. There are some medications that can be taken for pain and

psychiatric conditions. The dual therapy is appropriate to reduce medication adverse reactions. These medications include:

I. Antidepressants. Selective serotonin reuptake inhibitors (SSROs), norepinephrine reuptake inhibitors (SNRIs), and tricyclic antidepressants (TCAs) are “double-duty drugs that can treat both psychiatric disorders and pain” (Harvard Medical School, 2020). The SNRIs such as Cymbalta, Effexor, have been used for diabetic neuropathy or fibromyalgia. In addition, Effexor has been used for headaches. The TCAs such as Elavil, nortriptyline, and desipramine have been used to treat nerve pain and chronic headaches. In its lower doses it is effective to treat depression.

II. Mood stabilizers. Mood stabilizers are anticonvulsants exert their effects by constraining aberrant electrical activity and hyper-responsiveness in the brain (Harvard Medical School, 2020). An example of such medication is Lyrica. Lyrica is used to treat diabetic neuropathy, postherpetic neuralgia, fibromyalgia, and generalized anxiety disorder.

3. Combining psychotherapy and drugs. Combining psychotherapy and drug in patients suffering from anxiety and depression will sometimes offer complete relief. In a study “the Stepped Care for Affective Disorders and Musculoskeletal Pain (SCAMP),” resulted a combination therapy might work for people from pain and a diagnosis psychiatric disorder (Harvard Medical School, 2020, p. 3).

Therefore, though an in-depth patient assessment and the utilization of the PDMP, healthcare providers can reduce the use of opioids and benzodiazepines, reduce the risk of medication misuse and abuse, lower addiction rates, and provide better evidence-base care.

The limitations in the participation of this project were due to the physician-nurse conflict. Although the models of healthcare are changing to incorporate NPs into the arena where

they are authorized to diagnose illnesses, treat conditions, and provide evidence-based health education to their patients (AANP, 2020). The lack of knowledge of NPs scope-of-practice and the traditional medical hierarchal model of practice, not only contributes to ineffective teamwork, but results as a barrier to a successful collaboration. The traditional medical hierarchal model promotes physician dominance over the healthcare team (AANP, 2020).

Dominance is defined as ruling, governing, or controlling; having or exerting authority or supreme influence: dominant in the chain of command (www.dictionary.com, 2020).

> In healthcare organizations, dominance is closely related to power and authority especially in the decision-making process. Physician's dominance has led to power imbalance in health care organization and the failure of physicians to adopt and respect the role of other health team members and the ethical role of other specialties especially nursing. (Ameen, 2017, p. 2)

After presenting this project to the medical director, I was immediately challenged about the content of the project regarding the utilization of the PDMP. The project tool was deemed misleading and was thought to get providers to admit that they were not accessing the PDMP. After reiterating the purpose of the project, requests were made to change the content of the project tool, obtain approval to further complete the project at the desired location, and for the project materials to be disseminated by a management. Allowing management to disseminate the project tool to the participants would have greatly altered the project data as their answers would not have been truthful for fear of penalization and void the promise of being anonymous. Upon careful consideration, the requests of the medical director were declined. In return, the medical director had a meeting with the rest of the management staff. The meeting resulted in this investigator being transferred to another site, the EMR system used was restructured to include a

prompt that ensured the PDMP had been accessed and if not, the provider was not able to continue charting until the PDMP had been accessed when prescribing controlled substances, and the dissemination of opioid and benzodiazepine overdose statistics in the faculties county and the neighboring counties. Additionally, the data for this project had been forever lost.

Although, physician dominance plagued this project, it did bring awareness to the staff regarding the importance of utilizing the PDMP in the clinical decision-making process. Yet, it does not ensure the information gathered from the PDMP would be used to provide better evidence- based care in a culture where systemically, the use of the PDMP was not initially enforced. Research has shown many physicians regularly ignore federal guidelines, prescribing large quantities of powerful opioid medications even when better treatment options are available. Another possible cause is that physicians are aware of these policies, and they just choose not to follow them.

Chapter Summary

Overall, the data shows that providers agree that registering for the PDMP was not difficult, there were no limitations preventing registration or utilization, the benefit of the PDMP out ways the risks, it helped to monitor controlled substances, its use, and doctor shopping, and helped to improve communication with staff, providers, and pharmacists. In review of the goals and management of patient substance use, providers are not convinced the PDMP will improve the management of patient substance use, will not have an impact on the patient management, and will not increase communication between providers regarding management of controlled substance use.

Based on the data analysis, the information obtained in this study is inconclusive. The inconclusively results from:

1. Sample population- Ninety-nine providers were chosen for the study. Twenty-two participants reviewed the measurement tool and only six providers participated. Thus, six participants cannot effectively represent the thoughts of the community., and
2. Pretest and Posttest. The data obtained is based only on the pretesting phase.

The posttest was not preformed due to lack of adequate participation. Thus, there no data available for comparison.

Chapter 5: Discussion of Conclusions and Recommendations

According to the CDC (2017), in the past recent years, there has been a dramatic increase in the acceptance and use of prescription opioids. Opioids which were used previously for the treatment of moderate-to -severe pain following surgery, injury or health conditions such as cancer, are now an accepted use for chronic pain, non-cancer related pain, such as back pain and osteoarthritis, despite the serious risks and lack of evidence about their long-term effectiveness (CDC, 2017). The CDC (2017) reports greater than 191 million opioid prescriptions dispensed to Americans in various states in 2017. Alabama had the highest prescribing rate. Health care providers wrote almost three times as many prescriptions per person as those in Hawaii (CDC, 2020a).

According to American Psychiatric Association (APA; 2017), addiction is a complex condition, a brain disease that is manifested by compulsive substance use despite harmful consequence. Often times, the drug addiction is so powerful that it encompasses their life consuming all their time, and energy (APA, 2017). The CDC (2017), documents at least one in four patients receiving long-term opioid therapy in primary care setting struggles with opioid addiction. These opioid deaths often involve benzodiazepines (CDC, 2017).

Benzodiazepines are used for anxiety and sleep (Lembke et al., 2018). Medications, in this class, are more effective when taken intermittently and no more than a month at a time. When benzodiazepines are taken long-term, their effectiveness cease causing anxiety and insomnia to worsen. According to Lembke et al. (2018), “In addition to addicion and death, long-term use of benzodiazepines can also contribute to cognitive decline, accidental injuries, and falls” (p. 693).

Lembke et al. (2018) reported a 67% increase (from 8.1 million to 13.5 million) in benzodiazepine prescriptions from 1992-2013 and the overdose deaths involving benzodiazepines have increase seven-fold between 1999- 2015. The risk of overdose death goes up nearly fourfold when benzodiazepines are combined with opioids. Yet, the rates of coprescribing benzodiazepines and opioids nearly doubled between 2001 and 2013 (Lembke et al., 2018).

In an effort to reverse the opioid epidemic resulting from coprescribing opioids and benzodiazepines, studies have recommended improving pain management guidelines and offering patients alternative treatments for anxiety and insomnia. Such treatments consist of behavioral intervention and long-term medications like selective serotonin reuptake inhibitors (CDC, 2017; Lembke et al., 2018).

In review of the facts presented, the PICOT question, How does accessing the Prescription Drug Monitoring Program (PDMP) prior to prescribing treatment compared to not accessing the PDMP when prescribing opioids and benzodiazepines decrease the incidents of the coprescribing of prescription medications in a 3-month period? was formulated, studied, and analyzed.

Implications of Analysis for Leaders

Although there is a hierarchy between physicians and NPs, they perform their duties with the similar goals. These goals include assessing patients, diagnosing patients, and treating patients via evidence-based medicine to achieve better patient outcomes. Yet, some physicians take it a step further, believing that NPs are incapable of providing quality, safe care at the same level as physicians due to the lack of training (American Medical Association [AMA], 2010; Fairman et al., 2011). Beliefs such as these, tend to keep many physicians practicing under the

traditional medical hierarchal model of practice which promotes physician dominance over the healthcare team (Hain & Fleck, 2014). Therefore, contributing to professional conflict and hostility resulting from the "general perception that doctors are in charge, giving orders that both nurses and patients must follow" (American Sentinel University [ASU], 2015, p. 1).

Nurse practitioners (NPs) are trained holistically. Nurses are taught to evaluate the body as a whole. Nurses are taught to consider the emotional, social, and cultural factors that affect the patient, whereas physicians are trained to focus on the patient's symptoms, strategize treatments and cures (ASU, 2015). The difference in education and practices between the two disciplines can also cause conflict.

Physicians experience a great deal of pressure in practice. They are expected to focus on seeing as many patients as possible, rather than the quality of care provided. In some facilities, physicians are evaluated based on patient satisfaction scores. High patient scores may be able to attributable to an increase in revenue. Therefore, in a culture where patient-centered satisfaction is important, also is the risk for overprescribing various medications (Gorman & Gorman, 2018).

NPs experience a great deal of stress in practice as well. NPs not only face stressors in regard to professional performance in the eye of the public, but they also face potential conflicts ranging from physicians' issues of competence to conflicts over diagnoses and treatment plans. Although the role of the NP is steadily evolving and expanding, the fact remains in most states, NPs are not independent practitioners and physicians ultimately make the final decisions in treatment.

In reviewing the opioid crisis, it has been documented, physicians are not solely to blame but do play a role in the continuance and the increase in misuse and abuse of controlled substances due to their prescribing practices (Gorman & Gorman, 2018). A CDC study released

in May of 2020, which found many physicians regularly ignore federal guidelines, prescribing large quantities of powerful opioid medications even when better treatment options are available (Mann, 2017). Providers that practice with a view of 'all pain is treatable' are practicing based on the patient's compliant and are treating patients according to their complaint and their clinical judgement. Practice behaviors such as these are the cause of the increase of opioid and benzodiazepine prescriptions (Gorman & Gorman, 2018).

In addition to the view that "all pain is treatable," some physicians suffer from a phenomenon called "small-area variation" in healthcare practice. In a study called the Dartmouth Atlas of Healthcare project conducted in the 1920s, basically state doctors in similar social networks make treatment decisions based on the habits and practices of those in their immediate community. Thus, suggesting physician behaviors are not always govenened by evidence, best practices, or guidlelines, but are greatly influenced by social signals (Gorman & Gorman, 2018).

In addition to the view that "all pain is treatable," some physicians suffer from a phenomenon called "small-area variation" in healthcare practice. In a study called the Dartmouth Atlas of Healthcare project conducted in the 1920s, basically states doctors in similar social networks make treatment decisions based on the habits and practices of those in their immediate community. These studies suggest that physician behavior is therefore influenced by social signals and not always governed by evidence, best practice, or guidelines (Gorman & Gorman, 2018).

NPs must always be cognizant of our practicing practices. Although we are not independent practitioners, we must not fall into "small-area variation" practicing habits or feel pressured into practicing in such a way that makes us uncomfortable or question our own ethics. In these types of situations, "taking an intellectual approach instead of allowing one's emotions

to take control when confronted by conflicts with physicians is congruent with the concepts of interprofessional collaboration" (Gegaris, 2007; Hain & Fleck, 2014). Interprofessional collaboration can be utilized as a tool to broaden physicians' knowledge about the role of a NP and help to better strengthen relationships to achieve better practice (Hain & Fleck, 2014; Maylone et al., 2011). Ultimately, physician-NP collaboration encompassing collegiality, respect, and patient-centered care will result in better patient outcomes (Hain & Fleck, 2014).

The coprescription of opioids and benzodiazepines continue to increase due to patient-centered care, lack of time constraints, social networks, lack of provider knowledge related to pain management, and in some cases, corporate's unrealistic provider goals. Thus, this project was performed within the framework of The Essentials of the Doctoral Education for Advanced Practice Nursing (AACN, 2006) to provide implications for future practice.

EBP Findings and Relationship to DNP Essentials (I-VIII)

Essential I: Scientific Underpinnings

This project integrated the science of nursing incorporating the knowledge from ethics, psychosocial, analytical, and organizational sciences as the basis for the highest level of nursing practice (AACN, 2006). Evidence-based guidelines and protocols were utilized to reeducate providers and implement changes in their prescribing practices of opioids and benzodiazepines within the Mental Health and Substance Abuse communities. The education provided within this project was bases on the theory of the middle-range theory of unpleasant symptoms (TOUS) and the PDMP. Providers were tasked with utilizing the TOUS theory to assess a patient and determine a treatment plan; then, access the PDMP to determine if their treatment plan would remain constant. Ultimately, the goal was to recognize that there were alternative treatment plans or resources for patients based on evidence-based guidelines than coprescribing opioids and

benzodiazepines. Thus, limiting patient concomitant use of opioids and benzodiazepines, reducing the possibility of misuse or abuse of these medications, and providing safer and higher quality of care.

Essential II. Organizational and Systems Leadership for Quality Improvement and Systems Thinking

The survey tool, "Early Assessment of the Prescription Drug Monitoring Program: A Survey of Providers," was used to assess the organization's need for improvement of patient safety and delivery of quality care via lowering controlled substance prescriptions. The organizational and systems leadership for quality improvement and systems thinking were accomplished via reeducating the healthcare providers about the opioid crisis, the dangers of coprescribing opioid and benzodiazepines, and the use of the PDMP.

Essential III. Clinical Scholarship and Analytical Methods for Evidence-Based Practice

Researched the current literature relating to the opioid epidemic and the coprescription of opioids and benzodiazepines. Utilized analytical methods to evaluate their results and incorporated them into the educational presentation. Encourage healthcare providers to implement these findings into their practice in hopes of promoting a safer and more effective evidence-based approach when treating patients.

Essential IV. Information System/Technology for the Improvement and Transformation of Health

Demonstrated the importance of accessing and evaluation of the information in the PDMP database in the decision-making process. This information resulted in a request to resign the EMR to incorporate a prompt to access the PDMP when prescribing a controlled substance. If the provider did not access the PDMP when prescribing the controlled substance, the system

alerted the provider that this quality control measure had not been fulfilled and wouldn't be able to be submitted for billing.

Essential V. Health Care Policy for Advocacy in Health Care

Performed a critical analysis of the health care policies at the local, state, and federal level related to the opioid epidemic and its prescribing practices. Reeducated the healthcare providers on such policies and issues related to patient-centered care surrounding the overprescribing of opioids and the penalties associated with sentinel events resulting from not accessing the PDMP.

Essential VI. Interprofessional Collaboration for Improving Patient Population and Population Outcomes

Effective communication was employed between the Medical Director and the staff in implementing this project. Although the project failed in terms of data collection. There was evidence of culture change as the Medical director authorized the redesign of the EMR to include access of the PDMP within the chart as a measure of quality improvement and in efforts to assist in the reduction of coprescribing benzodiazepines and opioids to various patients. It was during this point in the project, the reeducation of the NPs role was reiterated to foster change.

Essential VII. Clinical Prevention and Population Health for Improving the Nation's Health

Analyzed the scientific data referencing the coprescription of benzodiazepines and the misuse and abuse of opioids to implement change in provider prescription practices, improve provider treatment plans to include alternative treatments. Thus, bridging the gaps in the continuum of patient care.

Essential VIII. Advanced Nursing Practice

An analysis was completed reviewing providers prescription practices, organization needs for improvement to reduce the number prescriptions of opioids and benzodiazepines, the population served, policies on coprescriptions at the state, government, and local levels. Proposed changes in the clinical decision making, treatment plans of patients based on the recommendations from various studies and guidelines set for by the supporting governmental programs and certifying credentialing organizations and increase in provider communication related to patients receiving opioids and benzodiazepines from multiple providers to increase safer practices, provide better quality care based on the evidence-based guidelines.

Recommendations for Future Research and Clinical Practice

Due to the penalties associated with sentinel events associated with the overprescribing of opioids and the high rates of co prescriptions, providers are not going to admit to not accessing the PDMP. In order to address the opioid crisis and the problem of prescribers coprescribing opioids and benzodiazepines concomitantly, providers should be required to obtain education in pain management. Other, recommendations include: adding the PDMP prompt into the EMR's as a quality assure point and to making it easier for provider access, prepopulating controlled substances at a lower dose or at tapering doses for patients who have pain doses that are not controlled, offer therapy management option within the EMR, having a universal standard for providers to communicate regarding patient controlled substance prescriptions, changing the incentives and reimbursing more time with patients, the removal of pain as a score on satisfaction surveys, and change the incentives provided by the pharmaceutical companies for the use of their product (Gorman & Gorman, 2018). Of all the recommendations previously mentioned, is an avenue for multiple studies needing to be performed in the intervention of the

opioid epidemic and the coprescription of opioids and benzodiazepines. In order to elicit change for the better, the root cause must be identified and resolved. Although, there are many barriers to extinguishing this epidemic, it is also important to understand what providers think will make it easier to access the PDMP, other than having ancillary staff print out reports, might be a great place to start. Giving permission to ancillary staff to access the PDMP on the providers' behalf could be considered a breach of patient privacy.

Chapter Summary

This doctoral project was developed and performed with the expectation of providers showing providers that the PDMP is a tool that helps in the decision-making process to lower the coprescription of opioids and benzodiazepines, raise awareness to the outstanding numbers of patients who doctor shop within our organization and the surrounding counties, and to raise awareness of other medical treatments that are greatly underutilized and forfeited for pills as a treatment option. The PDMP was not developed as a punitive measurement towards providers. It is a tool that assists providers in their decision-making process to provide a safer and more effective treatment plan that is based on proven evidence-based guidelines. Incorporating its use into practice could lower the death rates.

Although, physicians are not solely to blame for the culture of overprescribing, they are responsible for its continuum. As health care providers practice incorporates the patient-centered care model, practitioners tend to prescribe what patients feel that want instead of what they need. Prescribing what a patient may need, will not always place the provider in a positive light. Often times, providers lose patients, revenue, and develop a less than stellar reputation because patients cannot get what they want and tarnishes the providers reputation. Therefore, as a community of

providers, interprofessional collaborative practice is imperative as providers have all sworn to provide medical care based on ethics and with a duty to do no harm.

Ultimately, even if all the aforementioned changes were to have occurred, it does not guarantee that healthcare providers will incorporate the information obtained from the PDMP in the decision-making process for the betterment of patients. Thus, all we can do is try.

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Appendix B: Survey Tool Permission

M Gmail
Permission to use Survey Tool
Crystal Beddard <xxxxxxxx@xxxxxxxxx>
To: jxxxxxxxxx@xxxxxxxxx
Mon, Apr 23, 2018 at 12:22 PM

Dear Ms. Matson,
My name is Crystal Beddard and I am a Doctoral student at Abilene Christian University. I am emailing you to ask for permission to use the survey in the Early Assessment of the Prescription Drug Monitoring Program: A Survey of
Providers. I have attached a formal letter of request.

Thank you in advance for your help and support. If you have any questions, I can be reached via cellphone at xxx-xxx-xxxx or via email at xxxxxxxxxx@gmail.com.

Sincerely,
Crystal Beddard
~ Letter-Seeking-Permission-to-Use-Survey.Questionnaire-Tool.Response-2.docx
29K

Appendix C: Permission Letter Response

Matson Jamie <XXXXXXXXXXXX@XXXXXXXXXXXXXX> Apr 23 (2 days ago)

To me

Hello Ms. Beddard,

Thank you for your patience. You have permission to use the Early Assessment of the Prescription Drug Monitoring Program: A Survey of Providers survey/questionnaire instrument.

We're interested in learning more about your project. Could you please send me a brief summary about it?

Kind regards,
Jamie

Jamie Matson
Executive Specialist
Program Design and Evaluation Services
Oregon Health Authority – Public Health Division and
Multnomah County Health Department
xxxxxx xxxxxxxxxxx xxxxxxx
Portland, OR 97232
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Appendix D: Survey Tool

PROGRAM DESIGN AND EVALUATION SERVICES

MULTNOMAH COUNTY HEALTH DEPARTMENT AND
OREGON HEALTH AUTHORITY

Early Assessment of the Prescription Drug Monitoring Program:
A Survey of Providers

January 10, 2013

Contact: David Dowler Phone: (xxx) xxx-xxxx
Fax: (xxx) xxx-xxxx
Email: xxxxxxxx@xxxxxxxx

Appendix E: Survey Questions and Raw Frequencies

A. Results for TOTAL GROUP (N= ?)

1. Have you heard about the Prescription Drug Monitoring Program, also known as PDMP?

? % of yes
? % no [*please read summary below*]

PDMP Summary:
This monitoring program became law and started up in September 2011. Pharmacies submit prescription data to the PDMP system for all Schedules II, III and IV controlled substances dispensed to Oregon residents. The protected health information (patient name, drug prescribed, provider) is collected and stored securely. Oregon healthcare providers and pharmacists may register for a free account to access information online from the PDMP system for their patients. The program was started to help inform prescription practice.

? % This does sound familiar
? % I still don't know what this is

2. Considering this program summary, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements.

For each statement, please choose one answer	Strongly Disagree	Disagree	Agree	Strongly agree	Don't know
a. This program is likely to improve management of patient prescriptions for controlled substances.					
b. Over time, I think most providers and pharmacists will be interested in registering to access and use this data system.					
c. This program will likely increase communication between providers.					
d. This prescription monitoring program will not have much impact.					

3. In general (not just for you or your practice) – so far, how have the benefits of the PDMP compared to the drawbacks?

? % benefits exceed the drawbacks
? % benefits and drawbacks are about equal

? % drawbacks exceed the benefits
? % I have no idea

4. In general (not just for you or your practice), how useful has the PDMP been so far?

How useful is the PDMP…		S	Not	Don
a …in helping clinicians and pharmacies to monitor patients "controlled substance prescriptions?				
b …in helping to control "doctor shopping" by patients seeking to access or abuse controlled substances?				
c …in helping providers consult with each other about possible prescription abuse by patients?				

Questions 2-4, for Registered Respondents Only (n=?)

2. Considering this program summary, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements.

For each statement, please choose one answer	Strongly Disagree	Disagree	Agree	Strongly agree	Don't know
a. This program is likely to improve management of patient prescriptions for controlled substances.					
b. Over time, I think most providers will be interested in registering to access and use this data system.					
c. This program will likely increase					

communication between providers.					
d. This prescription monitoring program will not have much impact.					

3. In general (not just for you or your practice) – so far, how have the benefits of the PDMP compared to the drawbacks?

? % benefits exceed the drawbacks
? % benefits and drawbacks are about equal
? % drawbacks exceed the benefits
? % I have no idea

4. In general (not just for you or your practice), how useful has the PDMP been so far?

How useful is the PDMP…	Very useful	Somewhat usefu	Not useful	Don't know
a …in helping clinicians and pharmacies to monitor patients' controlled substance prescriptions?				
b …in helping to control "doctor shopping" by patients access or abuse controlled substances?				
c …in helping providers consult with each other about possible prescription abuse by patients?				

B. Results for PHARMACISTS ONLY (N= ?)

5. Which of the following methods have you used to notify patients about the PDMP? (check all that apply)

? % we have not been notifying patients
? % posters on the wall of the pharmacy*
? % printed PDMP information handed out with appropriate prescriptions
? % printed PDMP information handed out with ALL prescriptions
? % verbal notification to patients with appropriate prescriptions
? % verbal notification to all patients
? % something else [? comments]

6. Have you heard about or received any complaints about the patient notification process from patients?

? % no

? % yes

? % about how many separate complaints?

6a. What has been the primary complaint? (? comments)

7. Have you heard complaints from anyone other than patients about the patient notification process?

? % no
? % yes, from pharmacy staff
? % yes, from health care providers?
% yes, from someone else

(*please specify whom*): (? comments)

8. Please think about your pharmacy's experience participating in the Prescription Drug Monitoring Program. Consider the statements below and indicate how much you agree or disagree with each.

For each statem one answer	Strongly Disagree	Disagree	Agre e	Strongly agree	Don't know
a. Program start up went very smoothly.					
b. We had all the information we needed when the program got up and running.					
c. I wish technical support could be more helpful.					
d. Overall, this has been a negative					

experience for our pharmacy.					
e. Our current experience uploading data is going very well.					

C. Results for Registered Pharmacists and Providers (N=?)

9. You have received this version of our survey because our records show that you have registered online as a user, to request and access information on patients. Is this correct?

? % not correct, I have <u>not</u> registered for an account
? % not sure
? % correct

9a. For how long have you had an account?
? % 2 months or less
? % more than 2 months
? % not sure

10. How would you characterize your use of the PDMP system?
? % I have never used it
? % very minimal user
? % moderate user
? % active and regular user

	Very easy	Somewhat easy	Somewhat difficult	Very Difficult
11. How easy was it to register as a user?				
12. How easy has it been to access patient information?				

13. In the <u>last 30 days</u>, about how many separate patients have you accessed the PDMP to monitor or check on prescription medication?
? % none
? % 1 - 5
? % 6 - 25
? % more than 25

14. In the past 30 days, for which of the following reasons have you used the PDMP system

(check all that apply)

(PHARMACIST ONLY)(N=?)

? % to assess controlled substance use of new patients
? % to assess controlled substance use for patients who might be over-using
? % some other criteria (? comments)

(PROVIDER ONLY)(N=?)

? % when prescribing a controlled substance for a new patient
? % when prescribing a new controlled substance for an existing patient
? % when a patient requests an early refill on a controlled substance
? % to assess controlled substance use for patients who might be over-using
? % some other reason (? comments)

15. Some providers have reasons for not using the PDMP system more often. How much do each of the following barriers keep you from using the system more?

	Large barrier	Medium barrier	Small barrier	Not a barrier
a. Limitations with internet access at work				
b. Not enough time				
c. Lack of benefit for my office				
d. Support staff not being allowed to access the system under my account				
e. Lack of training on how to use the PDMP				
f. The system is not easy to use				

16. What else would you rate as a large or medium barrier keeping you from using the PDMP system more often? (? Comments)

17. In the past 30 days, which of the following actions have you taken as a result of using the PDMP system to monitor prescription medications for you patients? (check all that apply)

(PHARMACISTS ONLY)(N=?)

? % spoken with a patient about controlled substance use
? % contacted prescribers or other pharmacies
? % confirmed patient not misusing prescriptions
? % confirmed patient was doctor shopping

? % denied prescription for a patient
? % something else (? comments)

(PROVIDERS ONLY)(N=?)

? % spoken with a patient about controlled substance use
? % contacted other providers or pharmacies
? % confirmed patient not misusing prescriptions
? % confirmed patient was doctor shopping
? % reduced or eliminated prescriptions for a patient
? % dismissed patient from practice
? % referred or recommended for substance abuse treatment
? % referred or recommended for pain management
? % referred or recommended for anxiety (or other psychiatric disorder) management
? % something else (? comments)

18. As a result of using the PDMP system, do you communicate more with any of the following groups?

Do you communicate more with…	Yes, definitely	Yes, somewhat	No
a. Clinicians and staff inside my practice			
b. Providers who write prescriptions			
c. Pharmacists			
d. Patients			

19. About which of the following topics do you communicate more with any of these groups? (check all that apply)

? % I don't communicate more ? % pain management	? % drug interactions ? % doctor shopping	? % substance abuse treatment ? % something else

20. How useful would any of the following categories be as additional resources on the PDMP website? (check all that apply)

	Somewhat useful	Not useful
a. Guidelines around pain management		
b. Advice for dealing with mental health issues		

c. Recommendations for seeir with substance abuse probl		
d. Advice for seeing patients dually diagnosed with mental health and substance abuse issues		
PROVIDERS ONLY e. Making referrals for substance abuse treatment		
f. Interacting with patients using PDMP data		
e. Anything else (? comments)		

D. Results for Non Registered Pharmacists and Providers (N=306)

21. You have received this version of our survey because our records show that you have not registered online as a user. Is this correct?

? % correct
? % not correct, I have registered for an account (pharmacists=? %;
providers=? %-- this a limitation)

22. Why haven't you registered as a user? (choose all that apply)
(PHARMACISTS ONLY)
? % there is no internet access at work
? % I'm not aware that I could register as a user
? % I'm too busy
? % I don't think there would be any benefits
? % I'm not allowed to share the account with my support staff
? % some other reason (please specify) (? comments)

(PROVIDERS ONLY)
? % there is no internet access at work
? % I'm not aware that I could register as a user
? % I'm too busy
? % I don't think there would be any benefits
? % I'm not allowed to share the account with my support staff
? % I rarely, if ever, prescribe controlled substances
? % some other reason (please specify) (? comments)

Results for Total Group

23. What one thing would improve this program, if anything?
Registered Pharmacists:? (or ? %) made a comment
Registered Providers:? (or ? %) made a comment
Non-registered Pharmacists: ? (or ? %) made a comment

Non-registered Providers: ? (or ? %) made a comment

24. What is your age?
? % under 30
? % 30-39
? % 40-49
? % 50-59
? % 60 or older

25. What is your gender?
? % male ? % female

26. What best characterizes your practice? (PROVIDERS ONLY)
? % large private office (6+ practitioners)
? % small private office (5 or fewer practitioners)
? % academic practice
? % emergency room
? % safety net clinic (e.g., FQHC)
? % hospital-based clinic
? % hospital: inpatient primarily
? % other

Appendix F: MD Specialties Included and Excluded From Sample

Selection was made considering most likely specialties to be candidates for using the PDMP

MD Specialties included (n=?)	MD Specialties excluded (n=?)

• Family, General,
• Internal Medicine: ?
• Emergency Medicine: ?
• Obstetrics and Gynecology: ?
• Orthopedic Surgery: ?
• Psychiatry: ?
• Other selected specialties: ?
  • acupuncture
  • addiction medicine
  • cardiovascular disease and cardiolog
  • Child and Adolescent Psychiatry
  • Child Psychiatry
  • gastroenterology
  • geriatric medicine
  • gynecology
  • hospice and palliative care
  • occupational health
  • oncology
  • pain medicine
  • physical medicine and rehab
  • preventive medicine
  • psychosomatic medicine
  • public health and preventive medicir
  • pulmonary medicine
  • rheumatology
  • sleep medicine
  • sport medicine
  • therapeutic radiology
  • urology
	• Allergy, and Allergy and Immunology
	• Anatomic Pathology and Clinical Pathology
	• Anesthesiology
	• All surgeries specialties
	• Child Neurology
	• Clinical Cardiac Electrophysiology
	• Critical Care Medicine
	• All pathology specialties
	• Dermatology
	• Diagnostic Radiology
	• Endocrinology, Diabetes and Metabolism
	• Hematology
	• Infectious Diseases
	• Maternal and Fetal Medicine
	• Medical Genetics

	• Medical Oncology • Neonatal-Perinatal Medicine • Nephrology • Neurology • Neuroradiology • Nuclear Medicine • Ophthalmology • Otology, Laryngology, Rhinology • All pediatric specialties • Plastic Surgery • Radiation Oncology • Radiology • Vascular and Interventional Radiology

Appendix G: Site Permissions

Dr. Linda Gibson
Attn: IRB
Abilene Christian University
1600 Campus Ct.
Abilene, Texas 79601

Dear Dr. Gibson and IRB Members:

I have read over Crystal Beddard's proposal for her research project to be carried out at XXXXXX XXXXXXX. I understand that this student is conducting this research project as part of her requirements for the Doctor of Nursing Practice program at Abilene Christian University in Abilene, Texas and will have the opportunity to present her research findings in other venues.

I understand that the Institutional Review Board for the Use of Human Subject's in Research (IRB) at Abilene Christian University is concerned with protecting the confidentiality, privacy, and well-being of research participants. Further, it is my understanding that the student will additionally, be advised in this project by her Project Chair and the Project Committee members, both of whom will have regular contact with this student.

I do not have concerns about the study the student has proposed based on conversations with the student and after reviewing her research project proposal. The agency supports this student 's plan and approves of the project, including recruitment of participant s and data collection, through our agency.

Should you have additional questions or concerns, you may contact me Dr. XXXX XXXXXX at xxx-xxx-xxxx or via email at xxxxx@xxxxxxxxxxxxxxxxxx.com

Sincerely,

Medical Director

[redacted]

March 29, 2018

Dr. Linda Gibson
Attn: IRB
Abilene Christian University
1600 Campus Ct.
Abilene, Texas 79601

Dear Dr. Gibson and IRB Members:

I have read over Crystal Beddard's proposal for her research project to be carried out at [redacted]. I understand that this student is conducting this research project as part of her requirements for the Doctor of Nursing Practice program at Abilene Christian University in Abilene, Texas and will have the opportunity to present her research findings in other venues.

I understand that the Institutional Review Board for the Use of Human Subject's in Research (IRB) at Abilene Christian University is concerned with protecting the confidentiality, privacy, and well-being of research participants. Further, it is my understanding that the student will additionally be advised in this project by her Project Chair and the Project Committee members, both of whom will have regular contact with this student.

I do not have concerns about the study the student has proposed based on conversations with the student and after reviewing her research project proposal. The agency supports this student's plan and approves of the project, including recruitment of participants and data collection, through our agency.

Should you have additional questions or concerns, you may contact me [redacted] MD at [redacted] or via email at [redacted]

Sincerely,

[redacted] MD, Psychiatrist
Medical Director

Appendix H: NIH/IRB Training Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **crystal beddard** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 08/09/2017.

Certification Number: 2447231.

Appendix I: Human Subjects Research Projections

Human Subjects Research Protections Results for Crystal Beddard

ⓘ Correct answers are hidden.

Score for this attempt: **85** out of 100
Submitted Jun 13 at 4:32am
This attempt took 8 minutes.

Appendix J: Online Research Ethics Course

CONGRATULATIONS

Has Successfully Completed

Section Six: Human Participation in Research

of the

Online Research Ethics Course

On this Day

06/13/2019

Have an Ethical Day

Appendix K: IRB Approval Letter

ABILENE CHRISTIAN UNIVERSITY
Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885

November 15, 2019

Crystal Beddard
Department of Nursing
Abilene Christian University

Dear Crystal,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "Use of the Prescription Drug Monitoring Program for Substance Abuse Monitoring and Pain Management",

was approved by expedited review (Category 7) on 11/15/2019 (IRB # 19-091). Upon completion of this study, please submit the Inactivation Request Form within 30 days of study completion.

If you wish to make any changes to this study, including but not limited to changes in study personnel, number of participants recruited, changes to the consent form or process, and/or changes in overall methodology, please complete the Study Amendment Request Form.

If any problems develop with the study, including any unanticipated events that may change the risk profile of your study or if there were any unapproved changes in your protocol, please inform the Office of Research and Sponsored Programs and the IRB promptly using the Unanticipated Events/Noncompliance Form.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

Appendix L: IRB Data Deactivation Letter

ABILENE CHRISTIAN UNIVERSITY
Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885

Dear

On behalf of the Institutional Review Board, I am writing to inform you that the project titled

(IRB#) has been inactivated, as requested, on . All non-exempt human research activities (defined under 45 CFR 46) should be halted at this time. If you wish to reopen this study in the future, please submit a new IRB request prior to initiating human research activities.

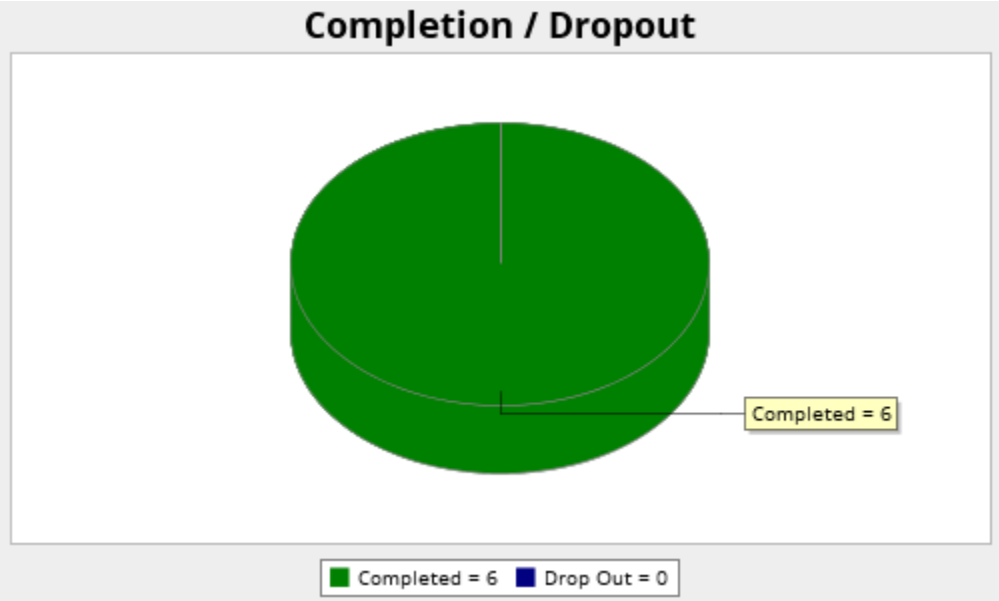
I wish you well with your work.

Sincerely,

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

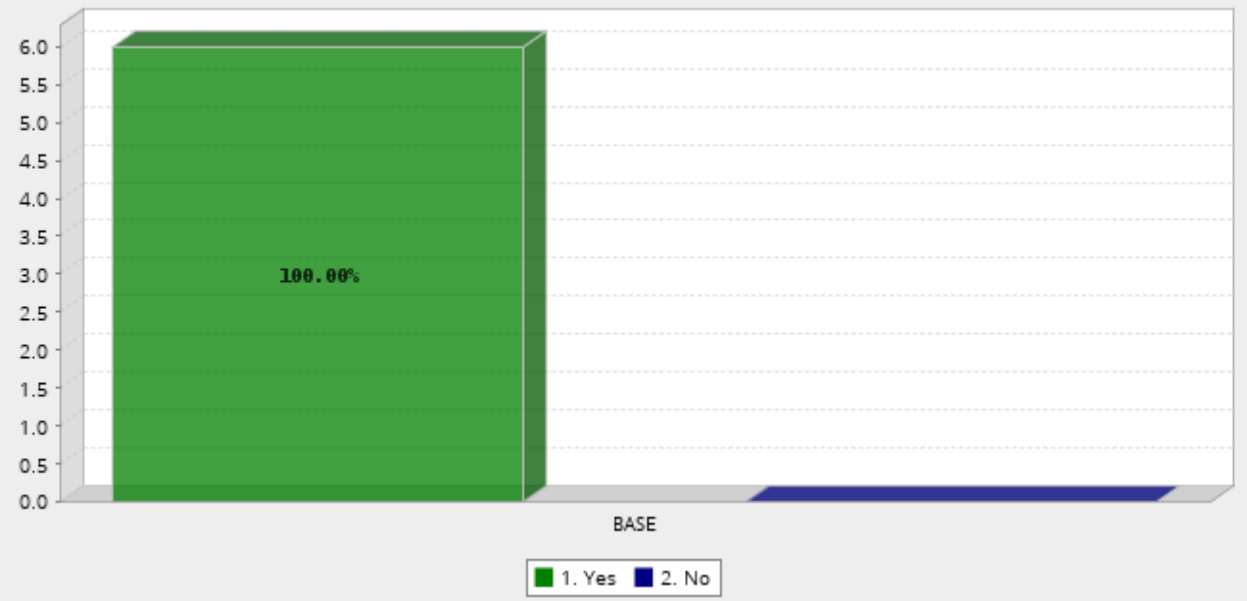
Appendix M: Results of the Survey Tool (RAW Data)

Survey Overview



Viewed	Started	Completed	Completion Rate	Drop-Outs (After Starting)	Average Time to Complete Survey
22	6	6	100%	0	10 minutes

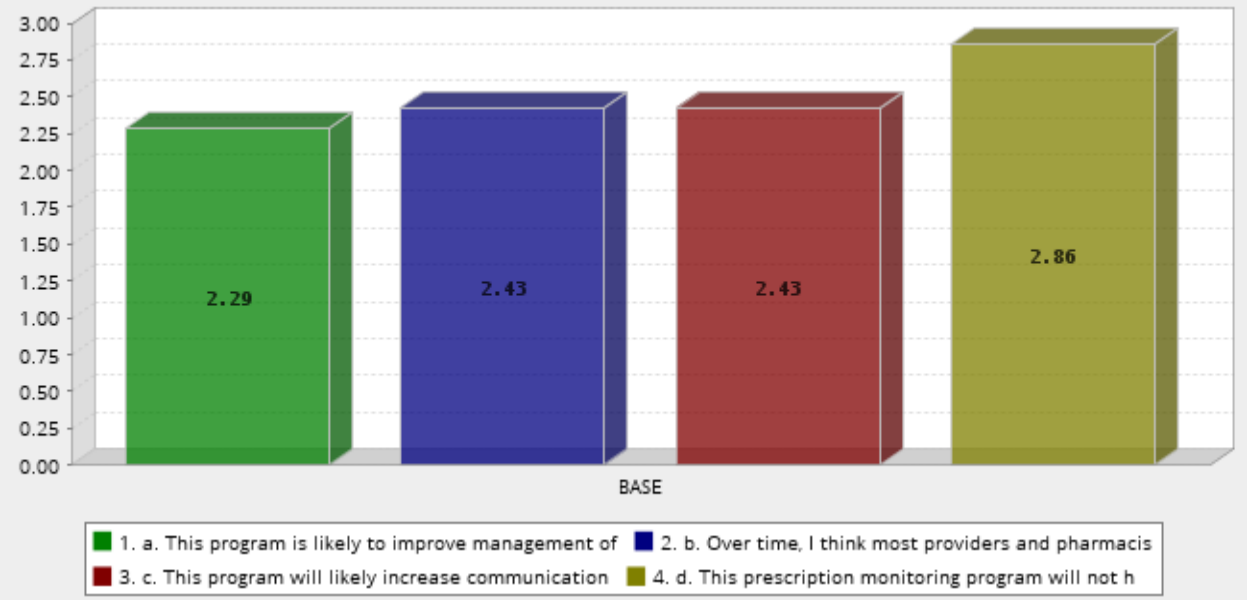
Q1. Have you heard about the Prescription Drug Monitoring Program, also known as PDMP?



	Answer	Count	Percent
1.	Yes	6	100.00
2.	No	0	0.00
	Total	6	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

Q2. Considering this program, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements. * Please choose one answer per statement. (Overall Matrix scorecard)



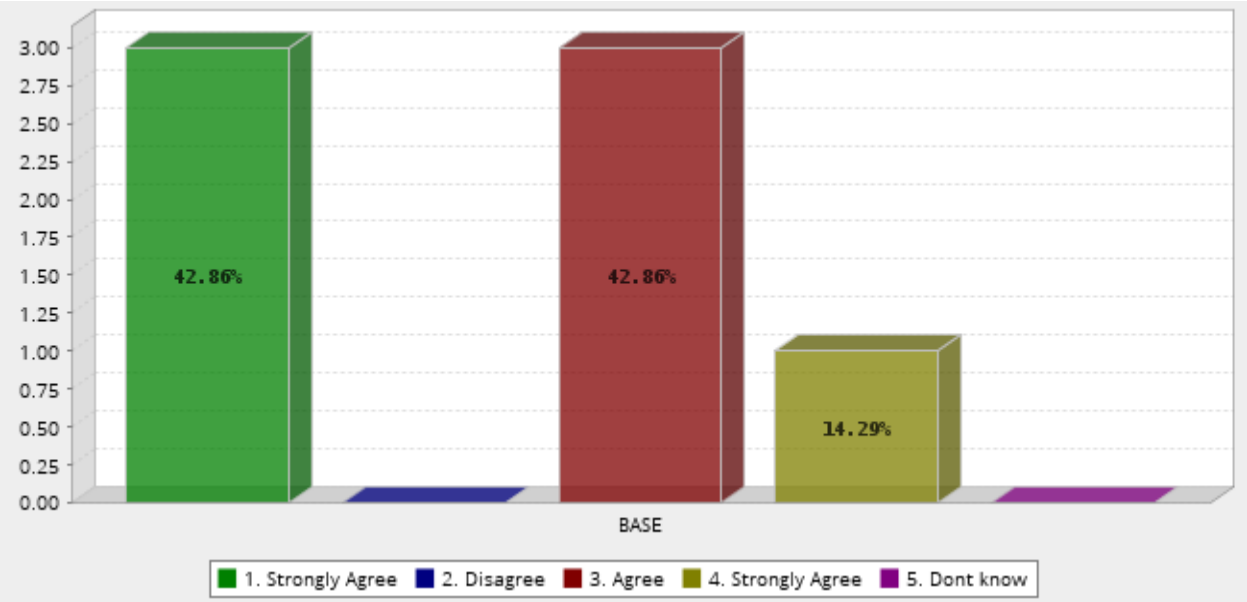
*****Overall Matrix Scorecard: 2. Considering this program, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements. * Please choose one answer per statement.**

	Question	Count	Score	
1.	a. This program is likely to improve management of patient prescription for controlled substances.	7	2.286	
2.	b. Over time, I think most providers and pharmacists will be interested in registering to access and use this data system.	7	2.429	
3.	c. This program will likely increase communication between providers.	7	2.429	

4.	d. This prescription monitoring program will not have much impact.	7	2.857	
		Average	2.500	

*****individual option analyzed:**

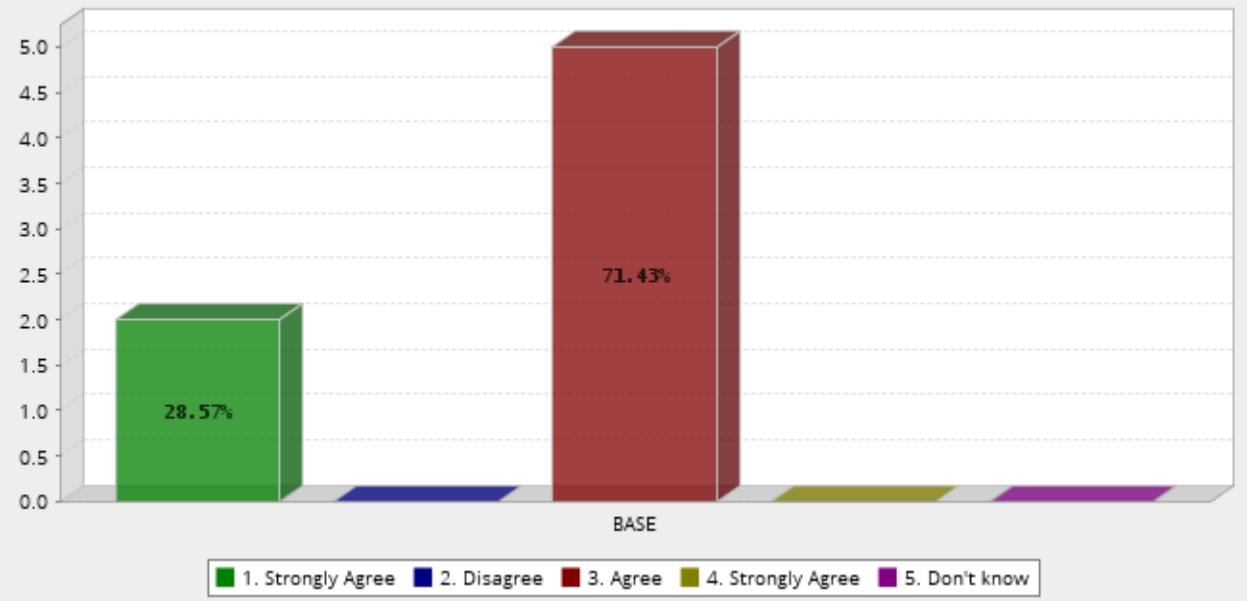
Q2. a. This program is likely to improve management of patient prescription for controlled substances.



	Answer	Count	Percent
1.	Strongly Agree	3	42.86
2.	Disagree	0	0.00
3.	Agree	3	42.86
4.	Strongly Disagree	1	14.29
5.	Don’t know	0	0.00
	Total	7	100.00

Mean: 2.286	Confidence Interval @ 95% : [1.357 - 3.214]	Standard Deviation: 1.254	Standard Error: 0.474

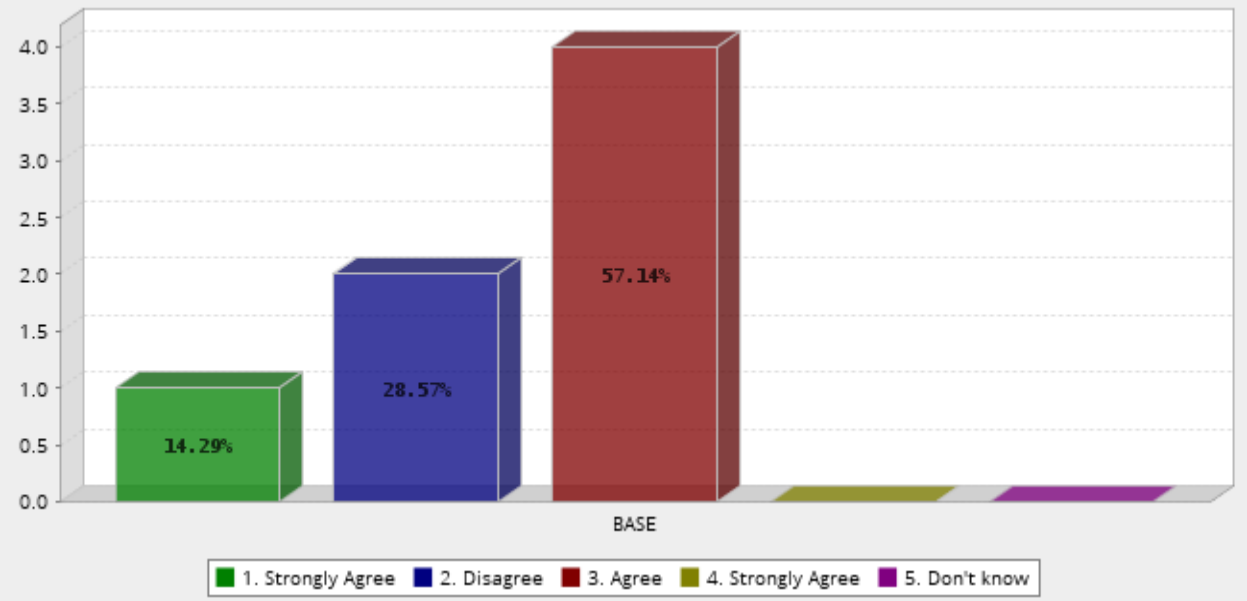
Q2. b. Over time, I think most providers and pharmacists will be interested in registering to access and use this data system.



	Answer	Count	Percent
1.	Strongly Agree	2	28.57
2.	Disagree	0	0.00
3.	Agree	5	71.43
4.	Strongly Disagree	0	0.00
5.	Don't know	0	0.00
	Total	7	100.00

Mean: 2.429	Confidence Interval @ 95% : [1.706 - 3.152]	Standard Deviation: 0.976	Standard Error: 0.369

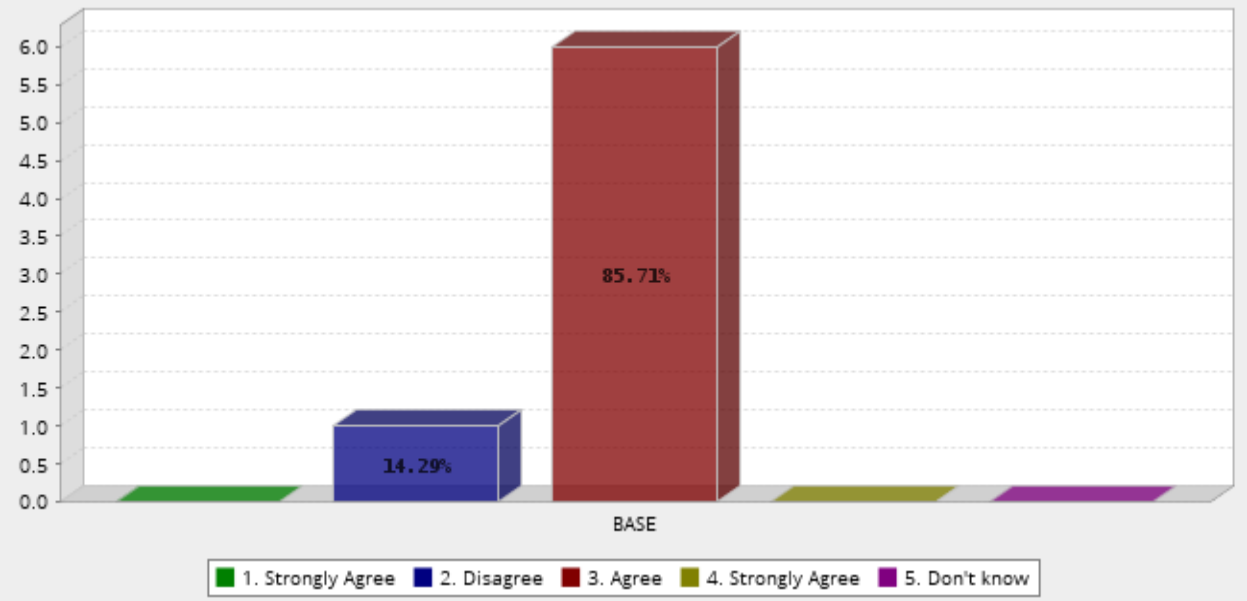
Q2. c. This program will likely increase communication between providers.



	Answer	Count	Percent
1.	Strongly Agree	1	14.29
2.	Disagree	2	28.57
3.	Agree	4	57.14
4.	Strongly Disagree	0	0.00
5.	Don't know	0	0.00
	Total	7	100.00

Mean: 2.429	Confidence Interval @ 95% : [1.846 - 3.011]	Standard Deviation: 0.787	Standard Error: 0.297

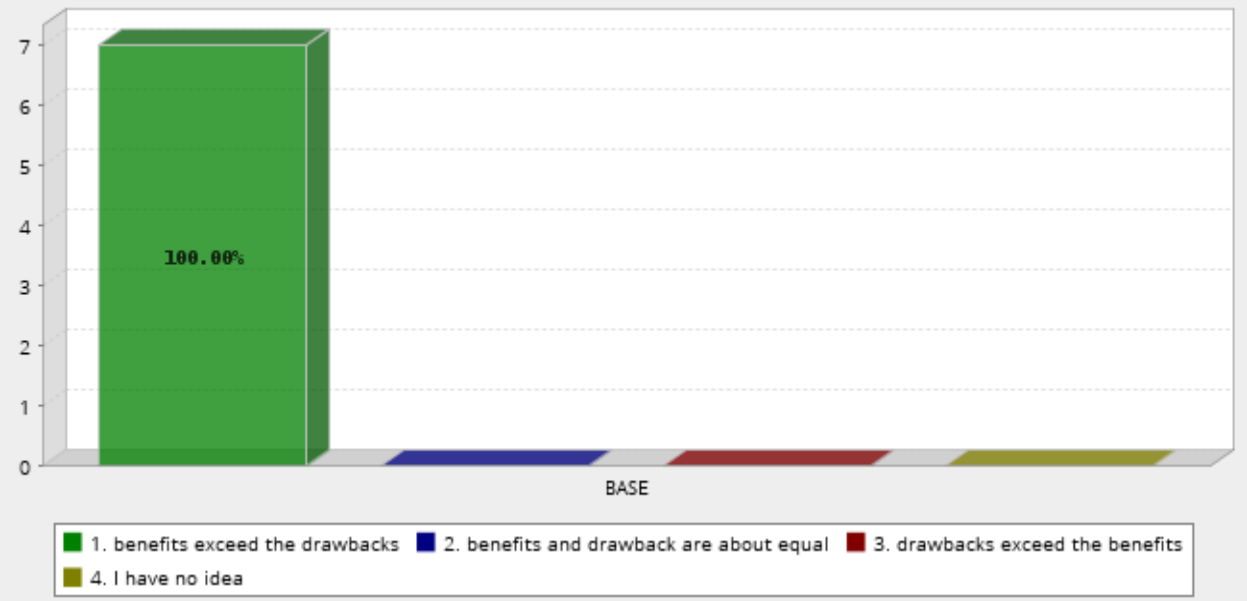
Q2. d. This prescription monitoring program will not have much impact.



	Answer	Count	Percent
1.	Strongly Agree	0	0.00
2.	Disagree	1	14.29
3.	Agree	6	85.71
4.	Strongly Agree	0	0.00
5.	Don't know	0	0.00
	Total	7	100.00

Mean: 2.857	Confidence Interval @ 95% : [2.577 - 3.137]	Standard Deviation: 0.378	Standard Error: 0.143

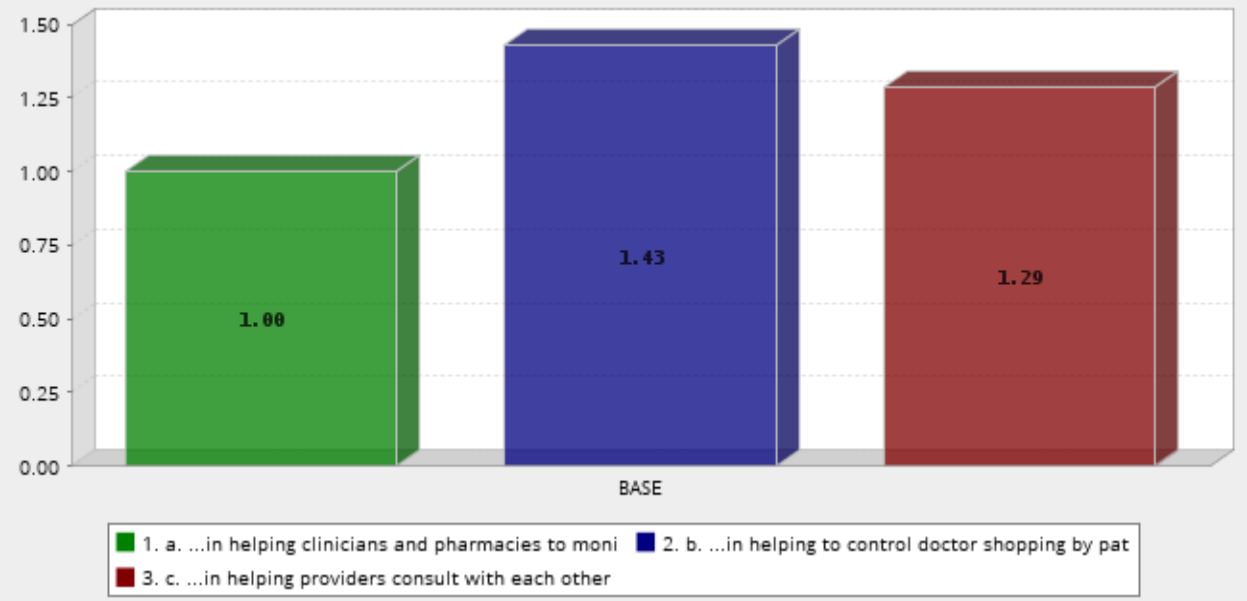
Q3. In general (not just for you or your practice) - so far, how have the benefits of the PDMP compared to the drawbacks?



	Answer	Count	Percent
1.	benefits exceed the drawbacks	7	100.00
2.	benefits and drawback are about equal	0	0.00
3.	drawbacks exceed the benefits	0	0.00
4.	I have no idea	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

Q4. In general (not just for you or your practice), how useful has the PDMP been so far? How useful is the PDMP.....

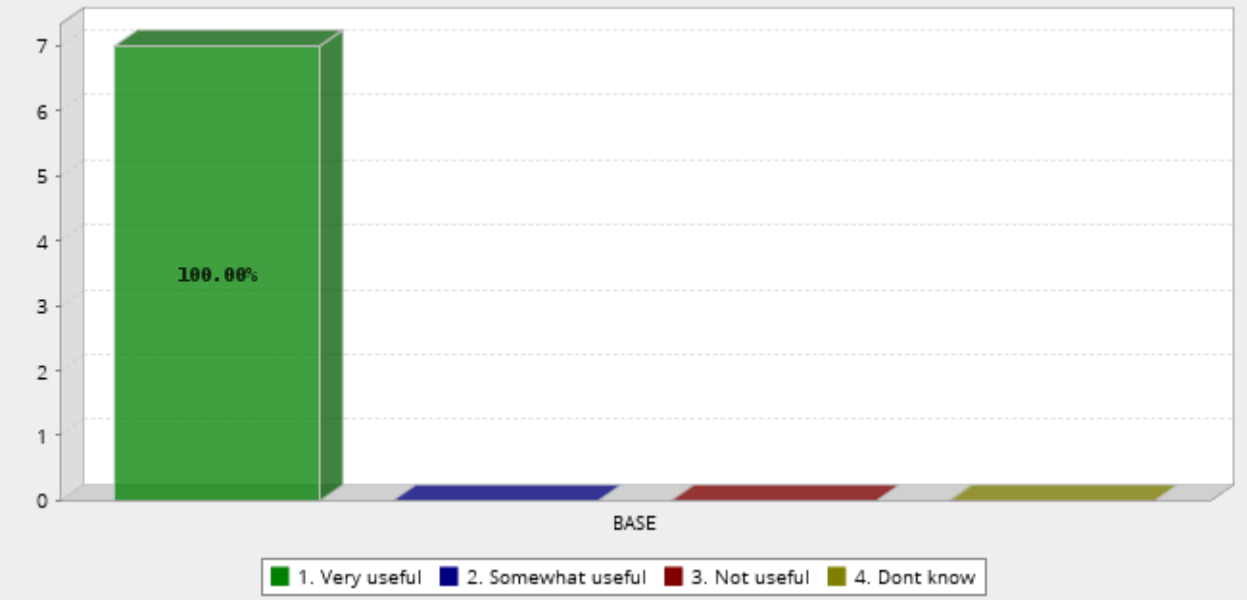


*** **Overall Matrix Scorecard**: In general (not just for you or your practice), how useful has the PDMP been so far? How useful is the PDMP.....

	Question	Count	Score	
1.	a. ...in helping clinicians and pharmacies to monitor patients "controlled substance prescriptions?"	7	1.000	
2.	b. ...in helping to control "doctor shopping" by patients seeking to access or abuse controlled substances?	7	1.429	
3.	c. ...in helping providers consult with each other about possible prescription abuse by patients?	7	1.286	
		Average	1.238	

****individual options analyzed**:

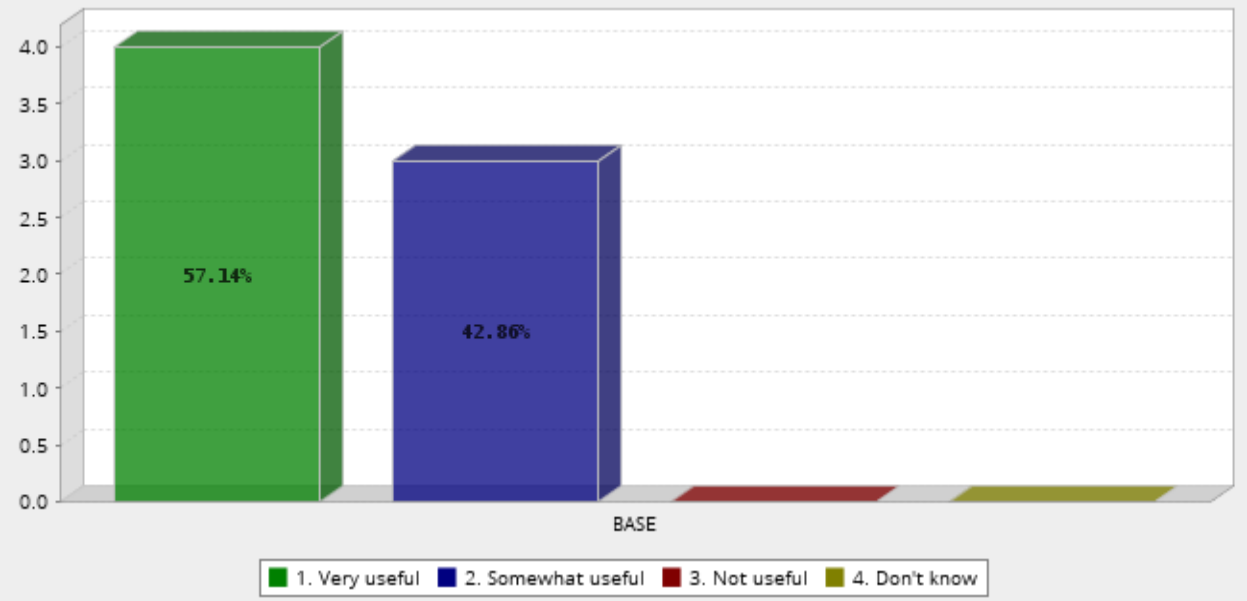
Q4. a. ...in helping clinicians and pharmacies to monitor patients' controlled substance prescriptions?



	Answer	Count	Percent
1.	Very useful	7	100.00
2.	Somewhat useful	0	0.00
3.	Not useful	0	0.00
4.	Don't know	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

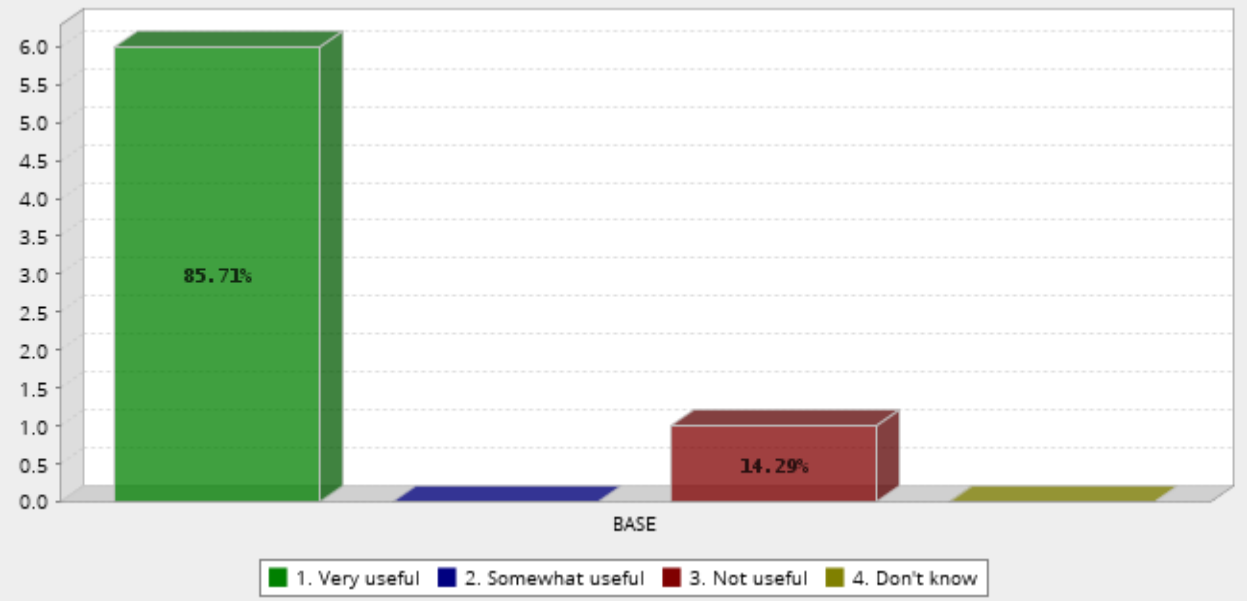
Q4. b. ...in helping to control doctor shopping by patients seeking to access or abuse controlled substances?



	Answer	Count	Percent
1.	Very useful	4	57.14
2.	Somewhat useful	3	42.86
3.	Not useful	0	0.00
4.	Don't know	0	0.00
	Total	7	100.00

Mean: 1.429	Confidence Interval @ 95% : [1.033 - 1.825]	Standard Deviation: 0.535	Standard Error: 0.202

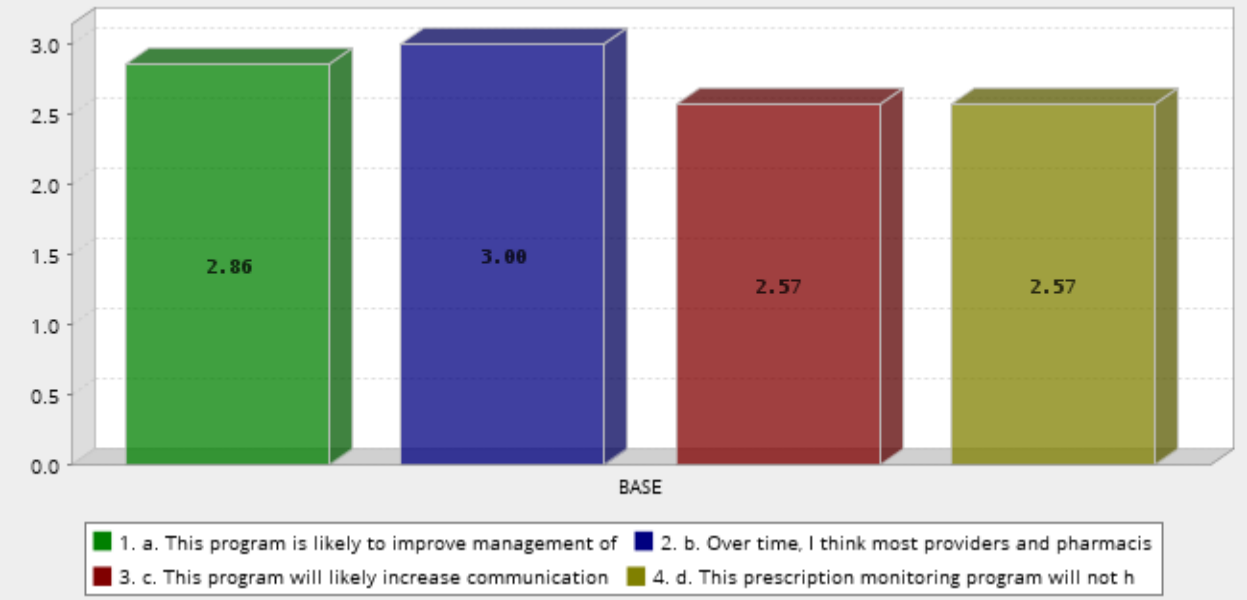
Q4. c. ...in helping providers consult with each other about possible prescription abuse by patients?



	Answer	Count	Percent
1.	Very useful	6	85.71
2.	Somewhat useful	0	0.00
3.	Not useful	1	14.29
4.	Don't know	0	0.00
	Total	7	100.00

Mean: 1.286	Confidence Interval @ 95% : [0.726 - 1.846]	Standard Deviation: 0.756	Standard Error: 0.286

Q5. Considering this program, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements. * Please choose one answer per statement.

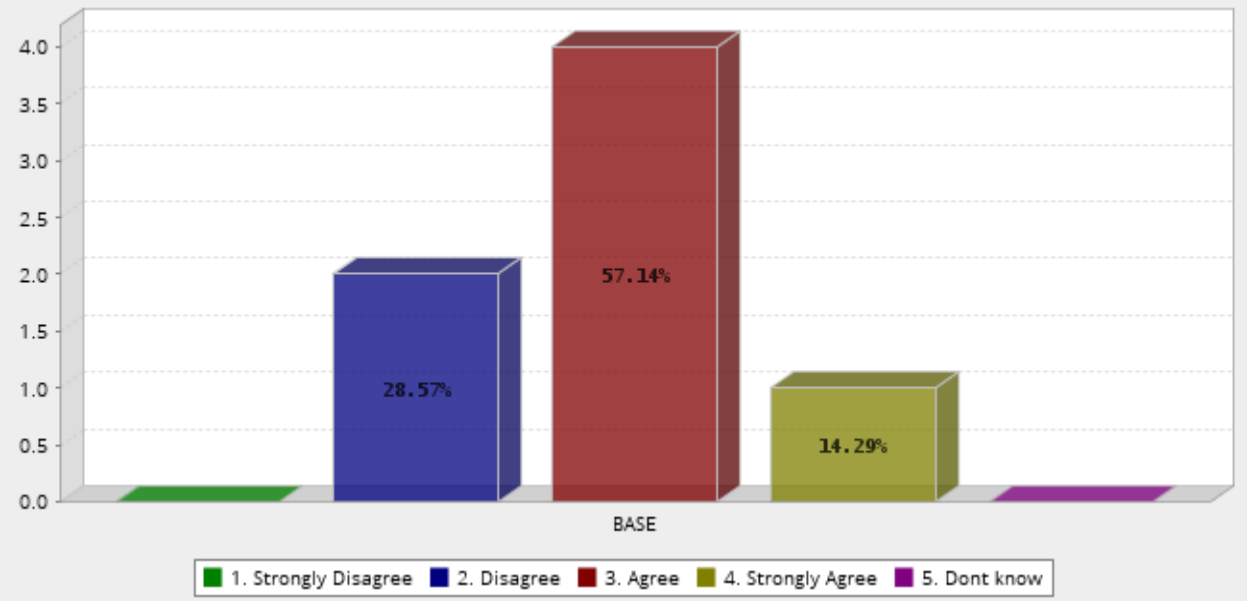


***** Overall Matrix Scorecard: Considering this program, and from your own knowledge of the program and its goals, please indicate how much you agree or disagree with the following statements. * Please choose one answer per statement.**

	Question	Count	Score	
1.	a. This program is likely to improve management of patient prescriptions for controlled substances.	7	2.857	
2.	b. Over time, I think most providers and pharmacists will be interested in registering to access and use this data system.	7	3.000	
3.	c. This program will likely increase communication between providers.	7	2.571	
4.	d. This prescription monitoring program	7	2.571	

	will not have much impact.			
			Average	2.750

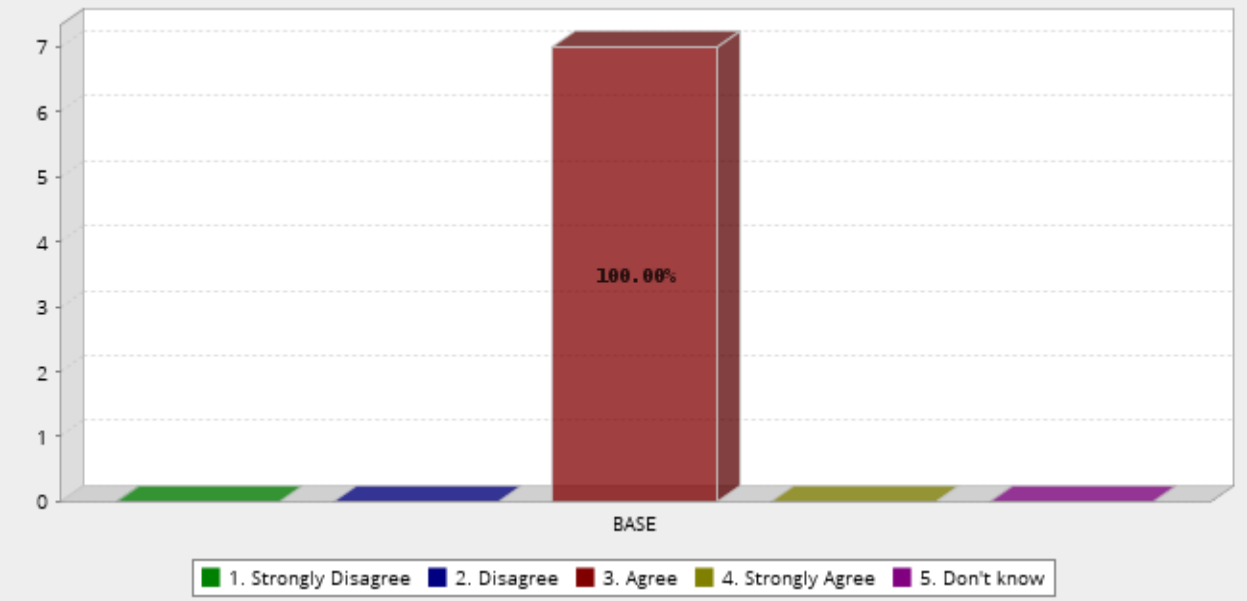
Q5. a. This program is likely to improve management of patient prescriptions for controlled substances.



	Answer	Count	Percent
1.	Strongly Disagree	0	0.00
2.	Disagree	2	28.57
3.	Agree	4	57.14
4.	Strongly Agree	1	14.29
5.	Dont know	0	0.00
	Total	7	100.00

Mean: 2.857	Confidence Interval @ 95% : [2.346 - 3.368]	Standard Deviation: 0.690	Standard Error: 0.261

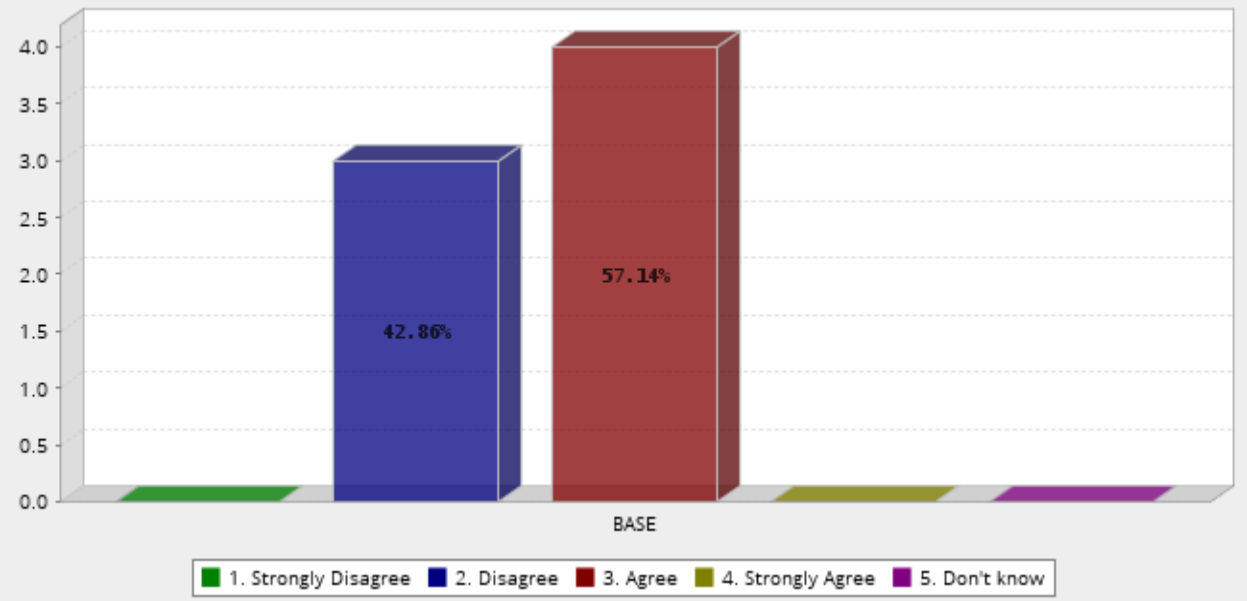
Q5. b. Over time, I think most providers and pharmacists will be interested in registering to access and use this data system.



	Answer	Count	Percent
1.	Strongly Disagree	0	0.00
2.	Disagree	0	0.00
3.	Agree	7	100.00
4.	Strongly Agree	0	0.00
5.	Don't know	0	0.00
	Total	7	100.00

Mean: 3.000	Confidence Interval @ 95% : [3.000 - 3.000]	Standard Deviation: 0.000	Standard Error: 0.000

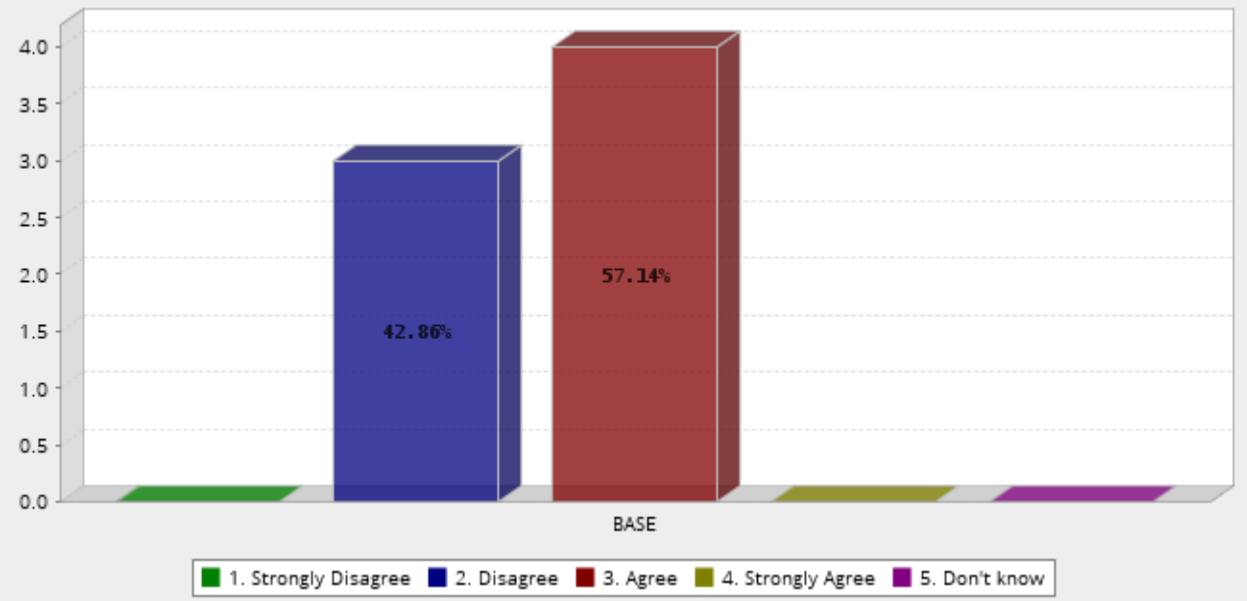
Q5. c. This program will likely increase communication between providers.



	Answer	Count	Percent
1.	Strongly Disagree	0	0.00
2.	Disagree	3	42.86
3.	Agree	4	57.14
4.	Strongly Agree	0	0.00
5.	Don't know	0	0.00
	Total	7	100.00

Mean: 2.571	Confidence Interval @ 95% : [2.175 - 2.967]	Standard Deviation: 0.535	Standard Error: 0.202

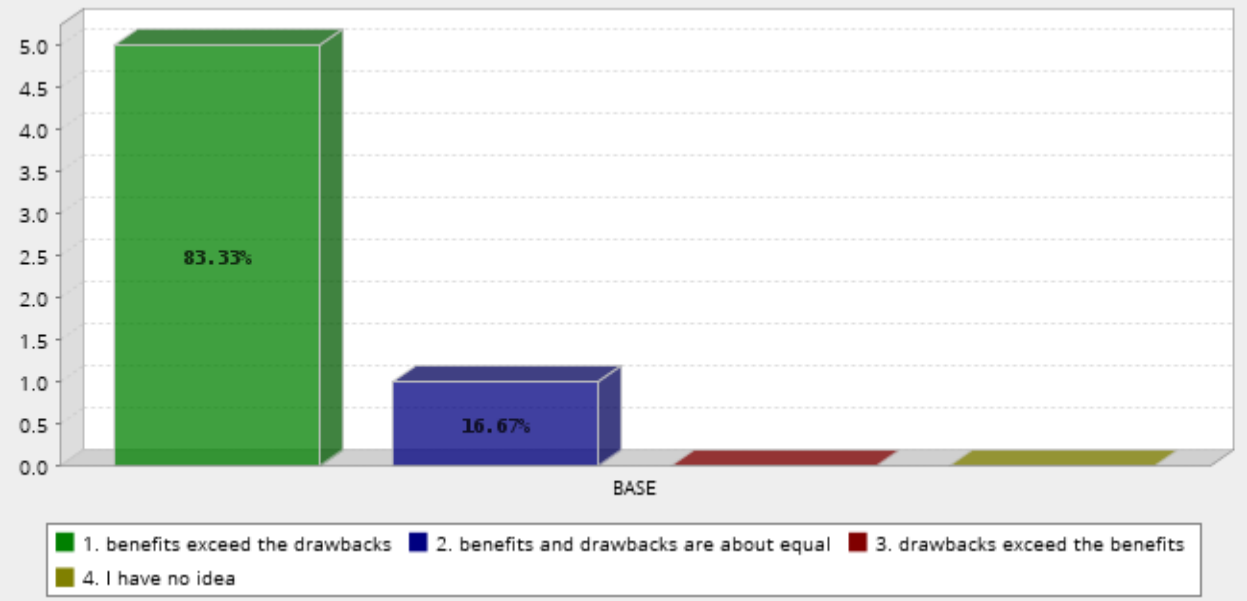
Q5. d. This prescription monitoring program will not have much impact.



	Answer	Count	Percent
1.	Strongly Disagree	0	0.00
2.	Disagree	3	42.86
3.	Agree	4	57.14
4.	Strongly Agree	0	0.00
5.	Don't know	0	0.00
	Total	7	100.00

Mean: 2.571	Confidence Interval @ 95% : [2.175 - 2.967]	Standard Deviation: 0.535	Standard Error: 0.202

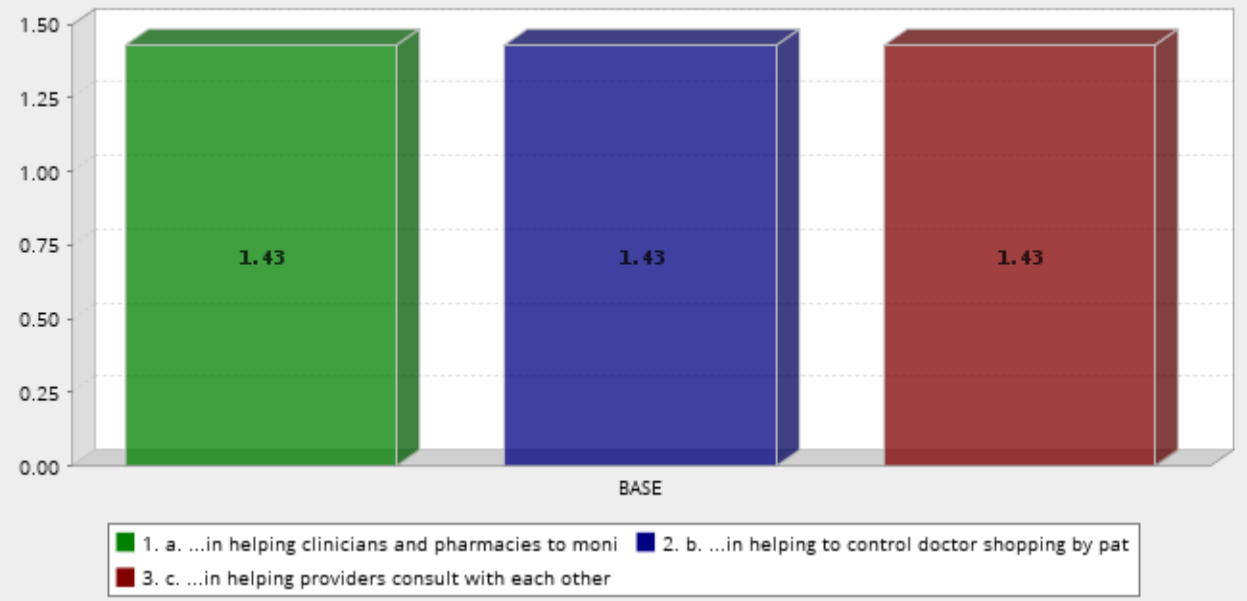
Q6. In general (not just for you or your practice) - so far, how have the benefits of the PDMP compared to the drawbacks?



	Answer	Count	Percent
1.	benefits exceed the drawbacks	5	83.33
2.	benefits and drawbacks are about equal	1	16.67
3.	drawbacks exceed the benefits	0	0.00
4.	I have no idea	0	0.00
	Total	6	100.00

Mean: 1.167	Confidence Interval @ 95% : [0.840 - 1.493]	Standard Deviation: 0.408	Standard Error: 0.167

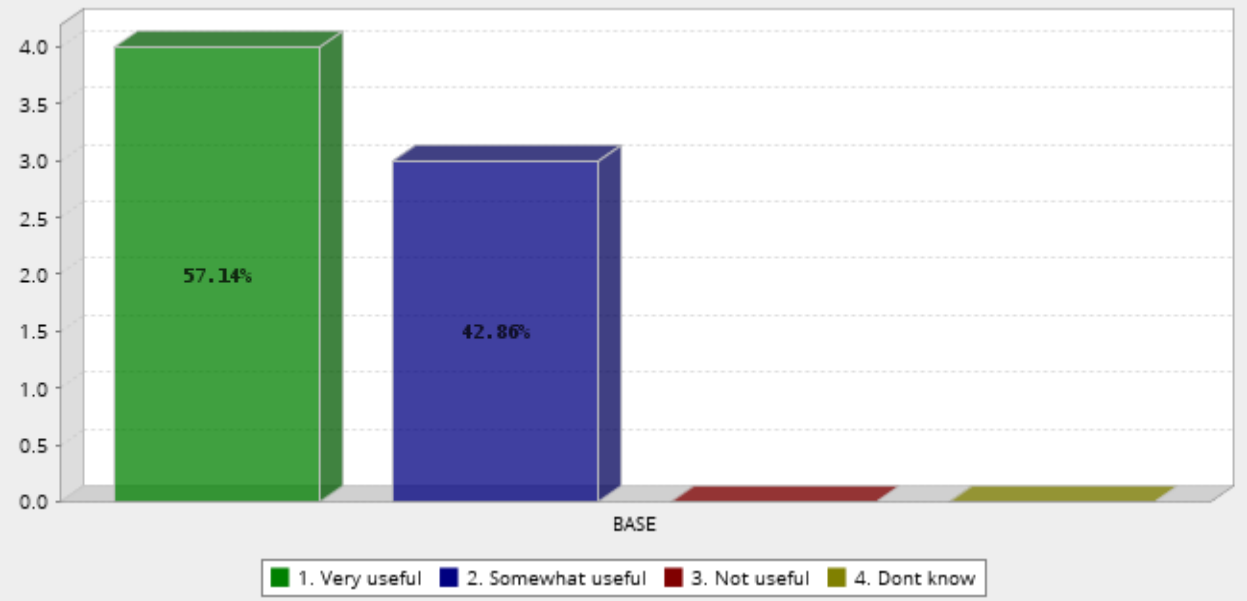
Q7. In general (not just for you or your practice), how useful has the PDMP been so far? How useful is the PDMP....



****** Overall Matrix Scorecard: In general (not just for you or your practice), how useful has the PDMP been so far? How useful is the PDMP....**

	Question	Count	Score	
1.	a. ...in helping clinicians and pharmacies to monitor patients' controlled substance prescriptions?	7	1.429	
2.	b. ...in helping to control "doctor shopping" by patients seeking to access or abuse controlled substances?	7	1.429	
3.	c. ...in helping providers consult with each other about possible prescription abuse by patients?	7	1.429	
		Average	1.429	

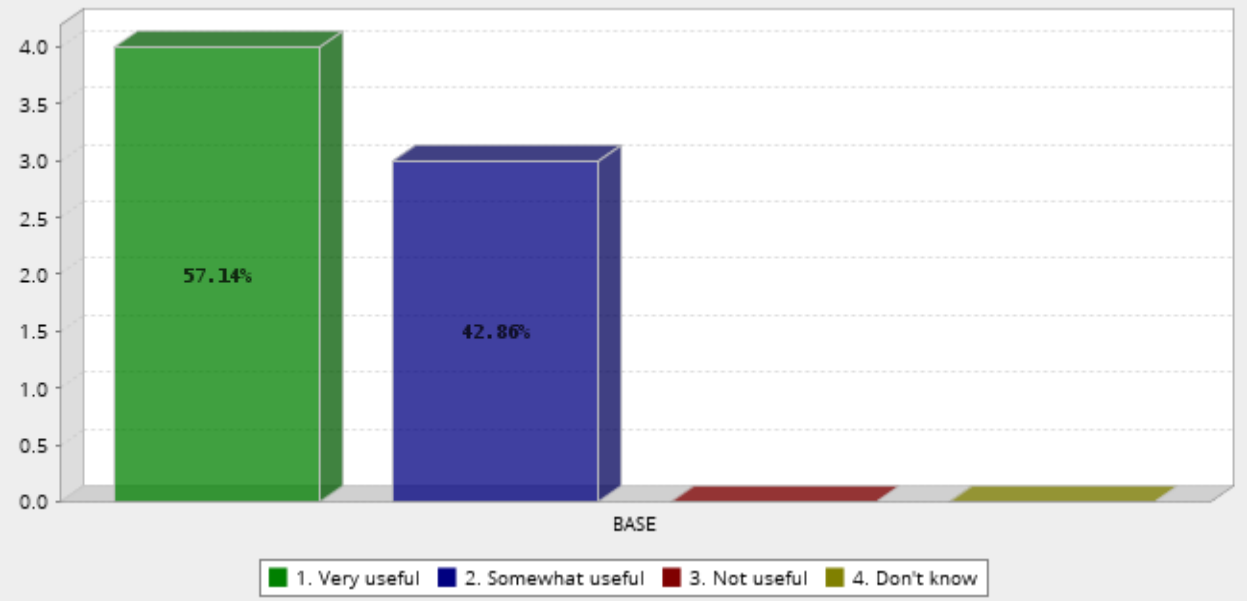
Q7. a. ...in helping clinicians and pharmacies to monitor patients' controlled substance prescriptions?



	Answer	Count	Percent
1.	Very useful	4	57.14
2.	Somewhat useful	3	42.86
3.	Not useful	0	0.00
4.	Don't know	0	0.00
	Total	7	100.00

Mean: 1.429	Confidence Interval @ 95% : [1.033 - 1.825]	Standard Deviation: 0.535	Standard Error: 0.202

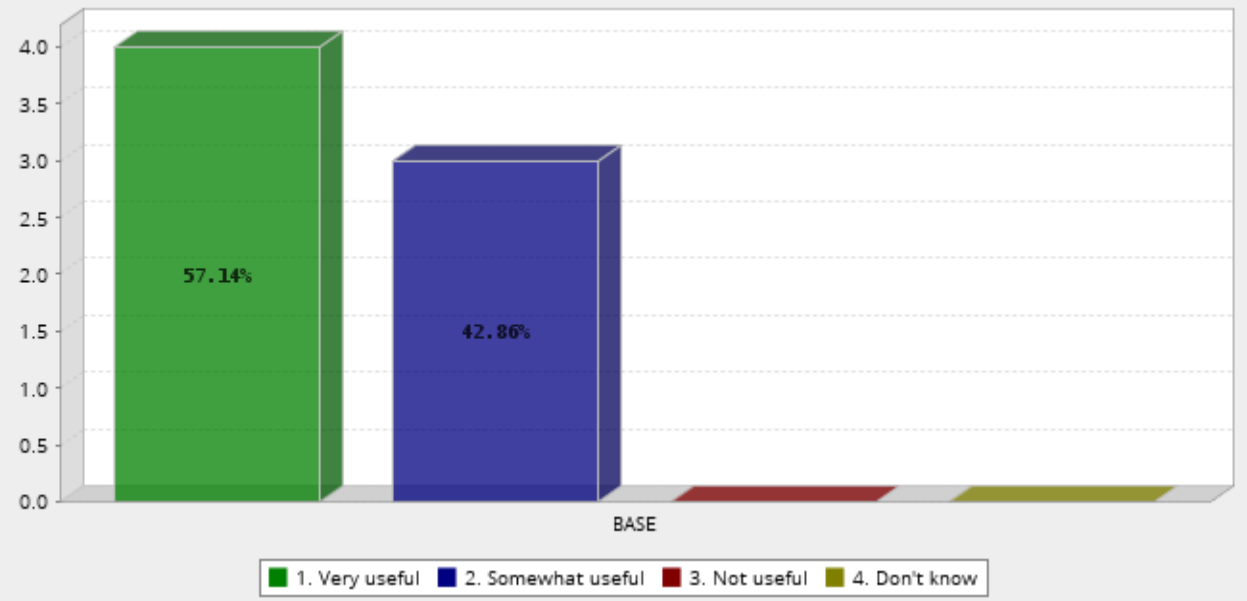
Q7. b. ...in helping to control doctor shopping by patients seeking to access or abuse controlled substances?



	Answer	Count	Percent
1.	Very useful	4	57.14
2.	Somewhat useful	3	42.86
3.	Not useful	0	0.00
4.	Don't know	0	0.00
	Total	7	100.00

Mean: 1.429	Confidence Interval @ 95% : [1.033 - 1.825]	Standard Deviation: 0.535	Standard Error: 0.202

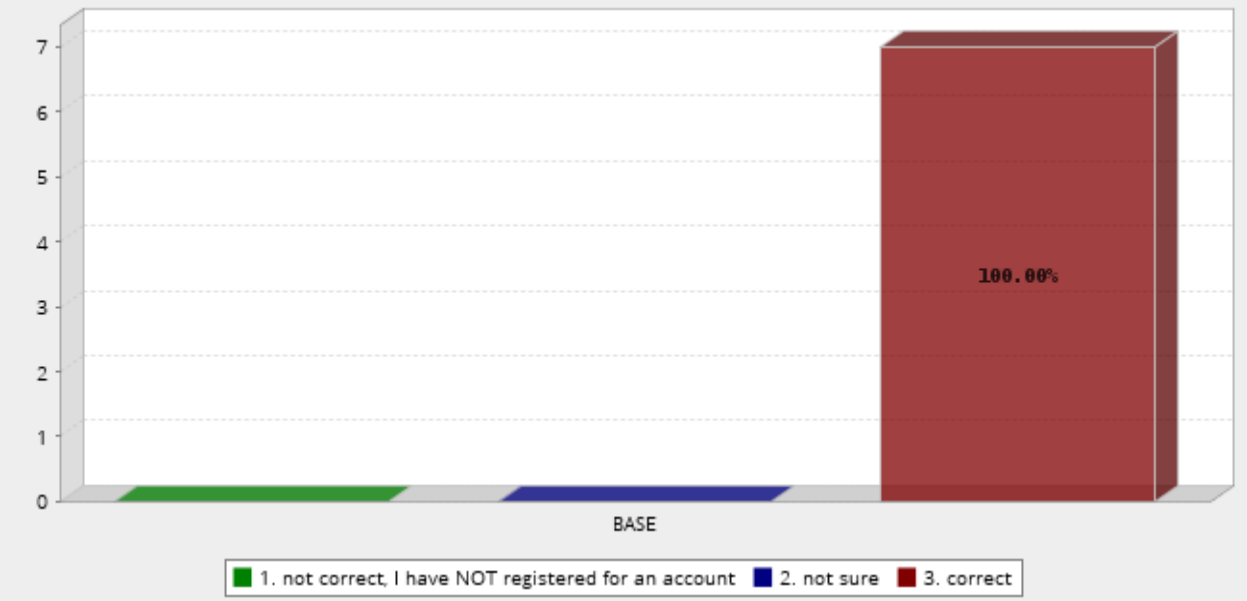
Q7. c. ...in helping providers consult with each other about possible prescription abuse by patients?



	Answer	Count	Percent
1.	Very useful	4	57.14
2.	Somewhat useful	3	42.86
3.	Not useful	0	0.00
4.	Don't know	0	0.00
	Total	7	100.00

Mean: 1.429	Confidence Interval @ 95% : [1.033 - 1.825]	Standard Deviation: 0.535	Standard Error: 0.202

Q8. You have received this version of our survey because our records show that you have registered online as a user, to request and access information on patients. Is this correct?



	Answer	Count	Percent
1.	not correct, I have NOT registered for an account	0	0.00
2.	not sure	0	0.00
3.	correct	7	100.00
	Total	7	100.00

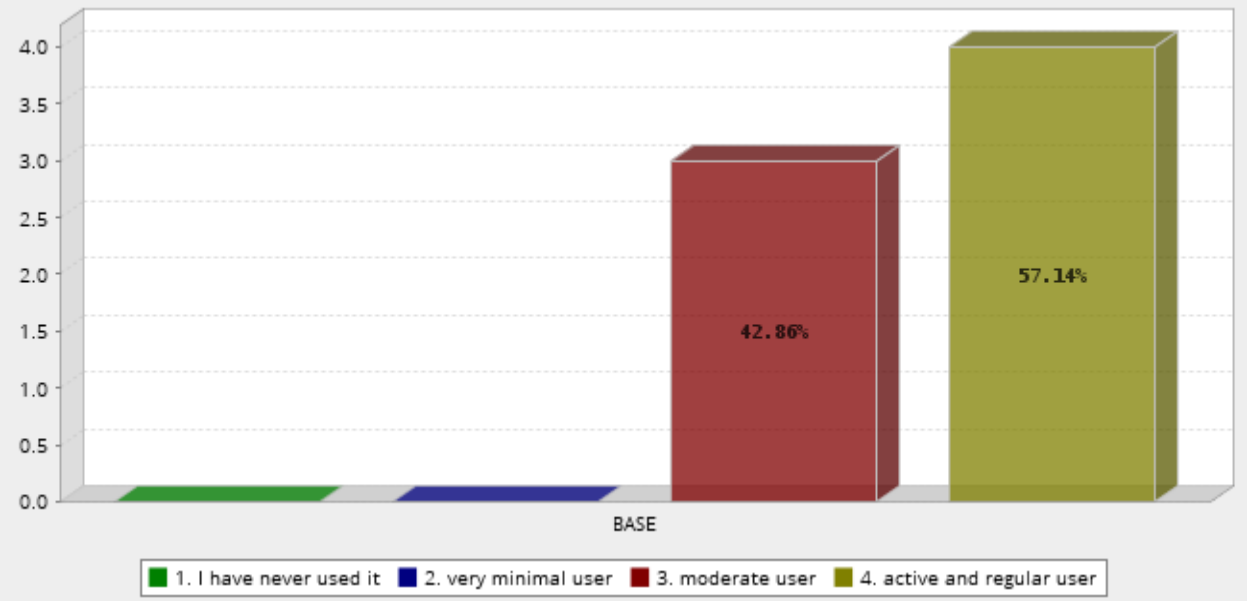
Mean: 3.000	Confidence Interval @ 95% : [3.000 - 3.000]	Standard Deviation: 0.000	Standard Error: 0.000

Q8a. If answered yes in Question 8, for how long have you had an account?

	Answer	Count	Percent
1.	2 months or less	1	14.29
2.	more than 2 months	6	85.71
3.	not sure	0	0.00
	Total	7	100.00

Mean: 1.857	Confidence Interval @ 95% : [1.577 - 2.137]	Standard Deviation: 0.378	Standard Error: 0.143

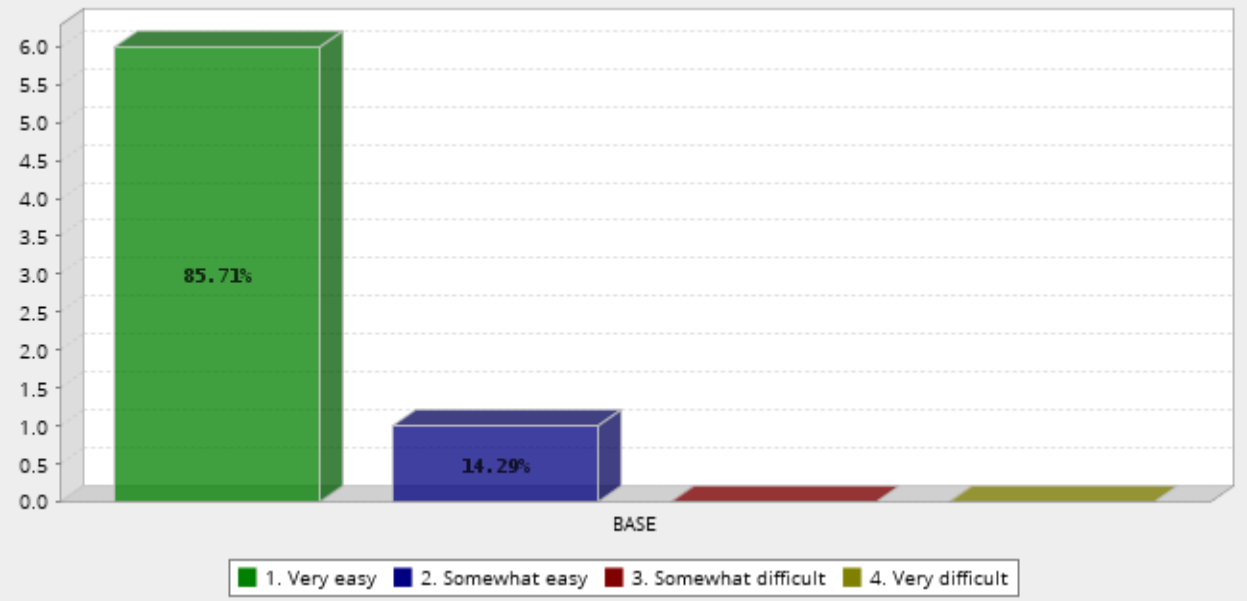
Q9. How would you characterize your use of the PDMP system?



	Answer	Count	Percent
1.	I have never used it	0	0.00
2.	very minimal user	0	0.00
3.	moderate user	3	42.86
4.	active and regular user	4	57.14
	Total	7	100.00

Mean: 3.571	Confidence Interval @ 95% : [3.175 - 3.967]	Standard Deviation: 0.535	Standard Error: 0.202

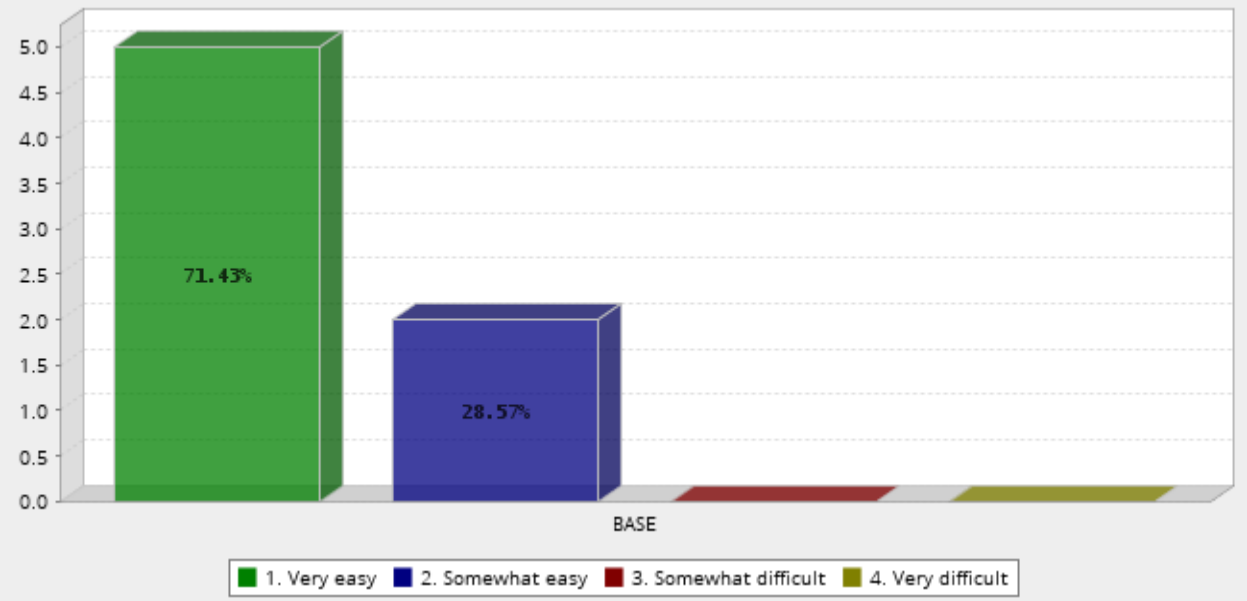
Q10. How easy was it to register as a user?



	Answer	Count	Percent
1.	Very easy	6	85.71
2.	Somewhat easy	1	14.29
3.	Somewhat difficult	0	0.00
4.	Very difficult	0	0.00
	Total	7	100.00

Mean: 1.143	Confidence Interval @ 95%: [0.863 - 1.423]	Standard Deviation: 0.378	Standard Error: 0.143

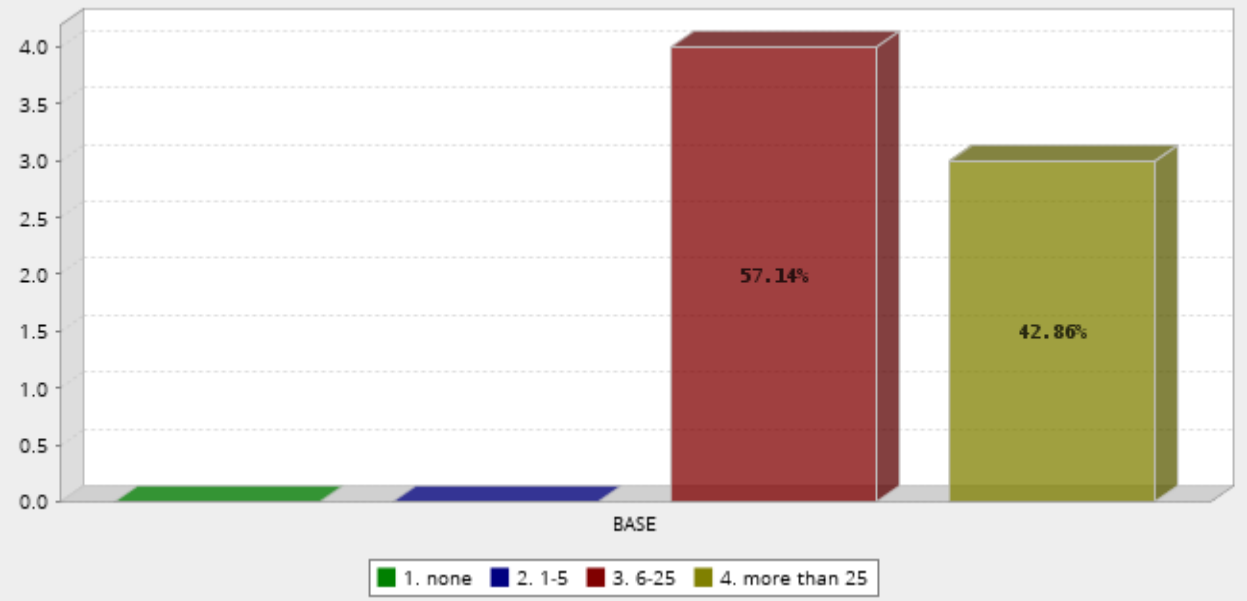
Q11. How easy has it been to access patient information?



	Answer	Count	Percent
1.	Very easy	5	71.43
2.	Somewhat easy	2	28.57
3.	Somewhat difficult	0	0.00
4.	Very difficult	0	0.00
	Total	7	100.00

Mean: 1.286	Confidence Interval @ 95%: [0.924 - 1.647]	Standard Deviation: 0.488	Standard Error: 0.184

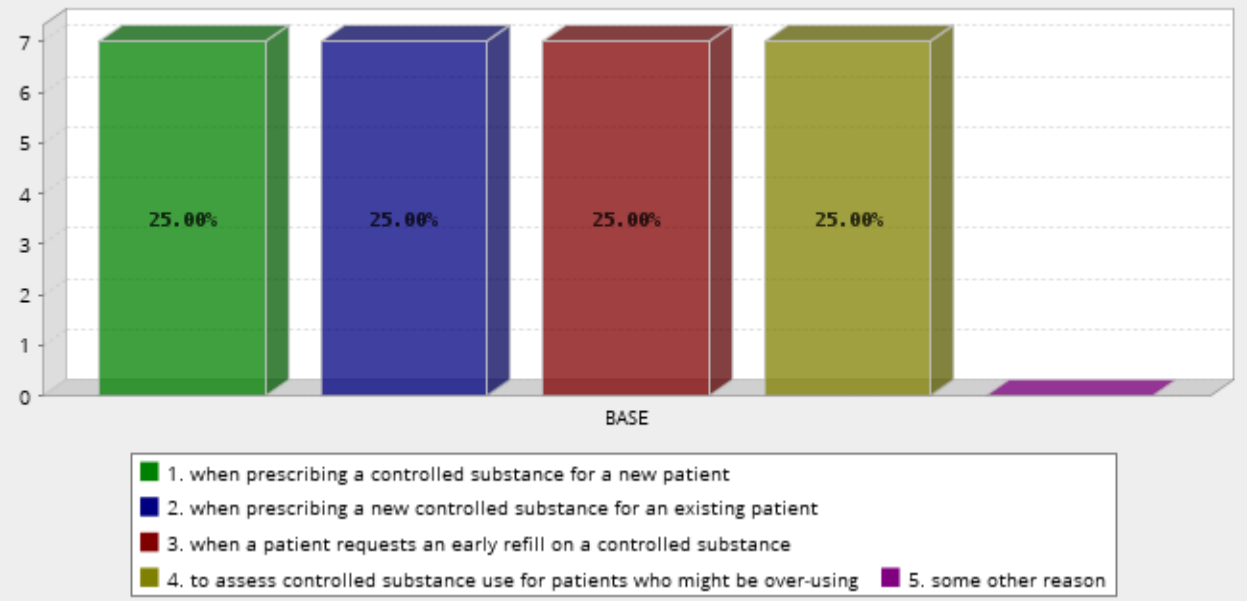
Q12. In the last 30 days, about how many separate patients have you accessed the PDMP to monitor or check on prescription medication?



	Answer	Count	Percent
1.	none	0	0.00
2.	1-5	0	0.00
3.	6-25	4	57.14
4.	more than 25	3	42.86
	Total	7	100.00

Mean: 3.429	Confidence Interval @ 95%: [3.033 - 3.825]	Standard Deviation: 0.535	Standard Error: 0.202

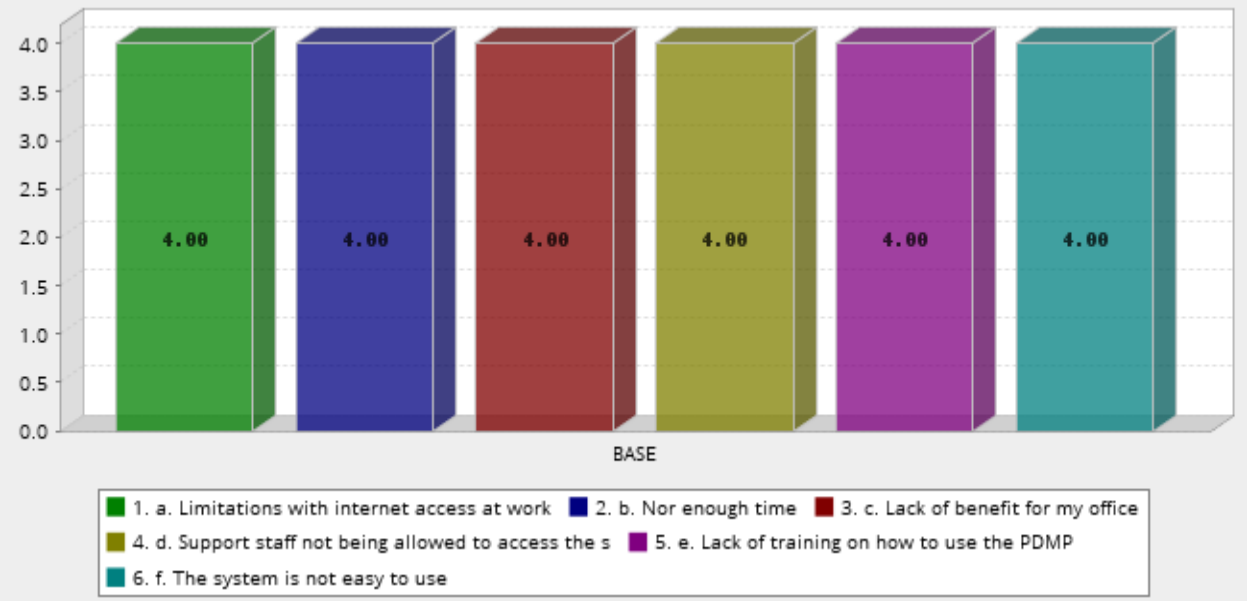
Q13. In the past 30 days, for which of the following reasons have you used the PDMP system? *Please check all that apply.



	Answer	Count	Percent
1.	when prescribing a controlled substance for a new patient	7	25.00
2.	when prescribing a new controlled substance for an existing patient	7	25.00
3.	when a patient requests an early refill on a controlled substance	7	25.00
4.	to assess controlled substance use for patients who might be over-using	7	25.00
5.	some other reason	0	0.00
	Total	28	100.00

Mean: 2.500	Confidence Interval @ 95%: [2.078 - 2.922]	Standard Deviation: 1.139	Standard Error: 0.215

Q14. Some providers have reasons for not using the PDMP system more often. How much do each of the following barriers keep you from using the system more?

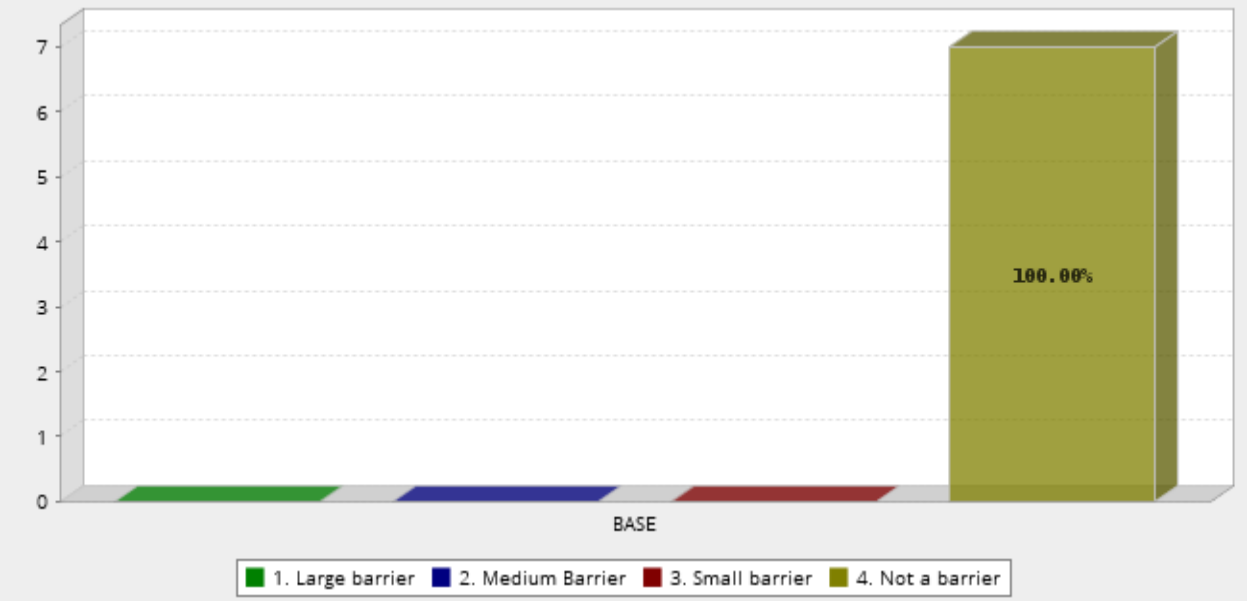


****** Overall Matrix Scorecard: Some providers have reasons for not using the PDMP system more often. How much do each of the following barriers keep you from using the system more?**

	Question	Count	Score	
1.	a. Limitations with internet access at work	7	4.000	
2.	b. Nor enough time	7	4.000	
3.	c. Lack of benefit for my office	7	4.000	
4.	d. Support staff not being allowed to access the system under my account	7	4.000	
5.	e. Lack of training on how to use the PDMP	7	4.000	
6.	f. The system is not easy to use	7	4.000	
		Average	4.000	

*****individual option analyzed:**

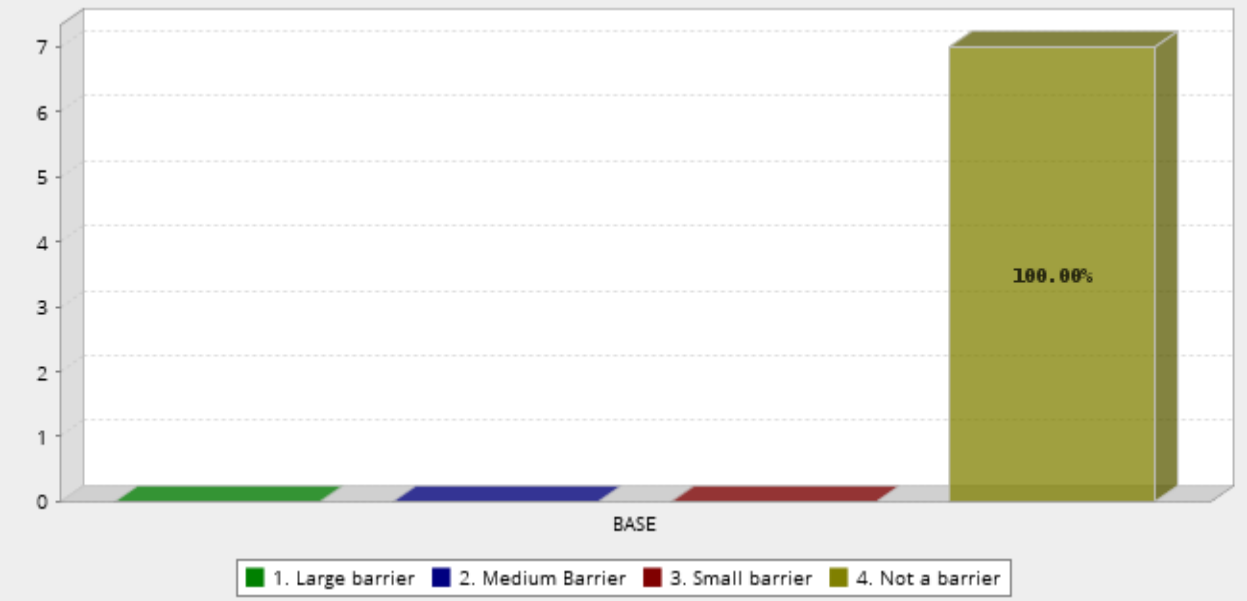
Q14. a. Limitations with internet access at work



	Answer	Count	Percent
1.	Large barrier	0	0.00
2.	Medium Barrier	0	0.00
3.	Small barrier	0	0.00
4.	Not a barrier	7	100.00
	Total	7	100.00

Mean: 4.000	Confidence Interval @ 95% : [4.000 - 4.000]	Standard Deviation: 0.000	Standard Error: 0.000

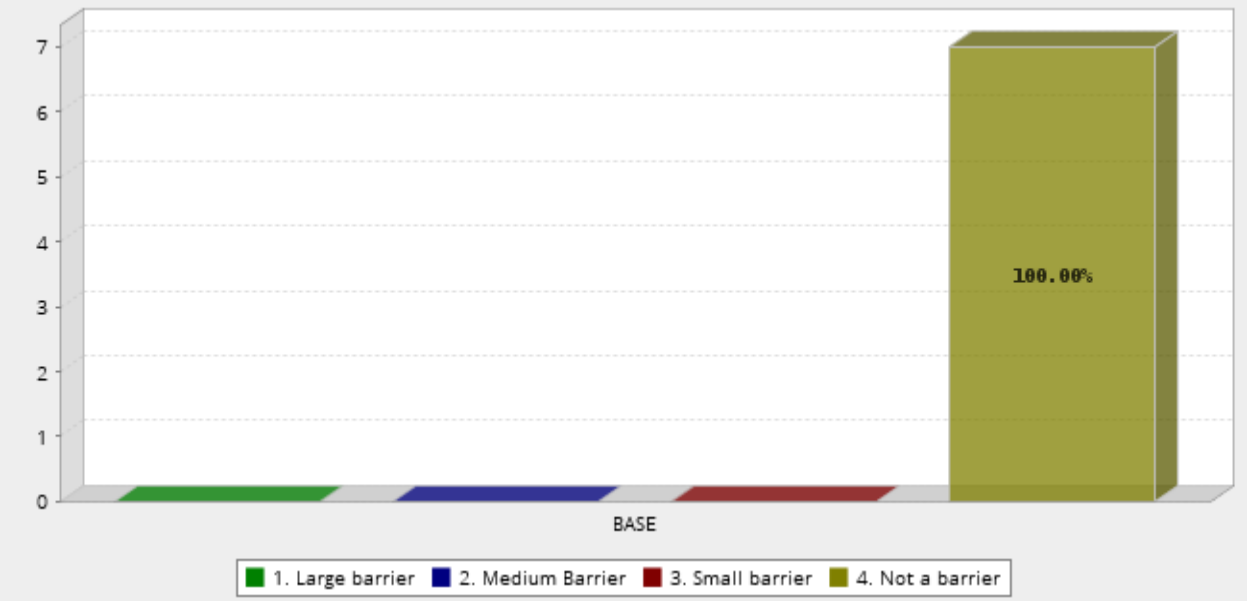
Q14. b. Nor enough time



	Answer	Count	Percent
1.	Large barrier	0	0.00
2.	Medium Barrier	0	0.00
3.	Small barrier	0	0.00
4.	Not a barrier	7	100.00
	Total	7	100.00

Mean: 4.000	Confidence Interval @ 95%: [4.000 - 4.000]	Standard Deviation: 0.000	Standard Error: 0.000

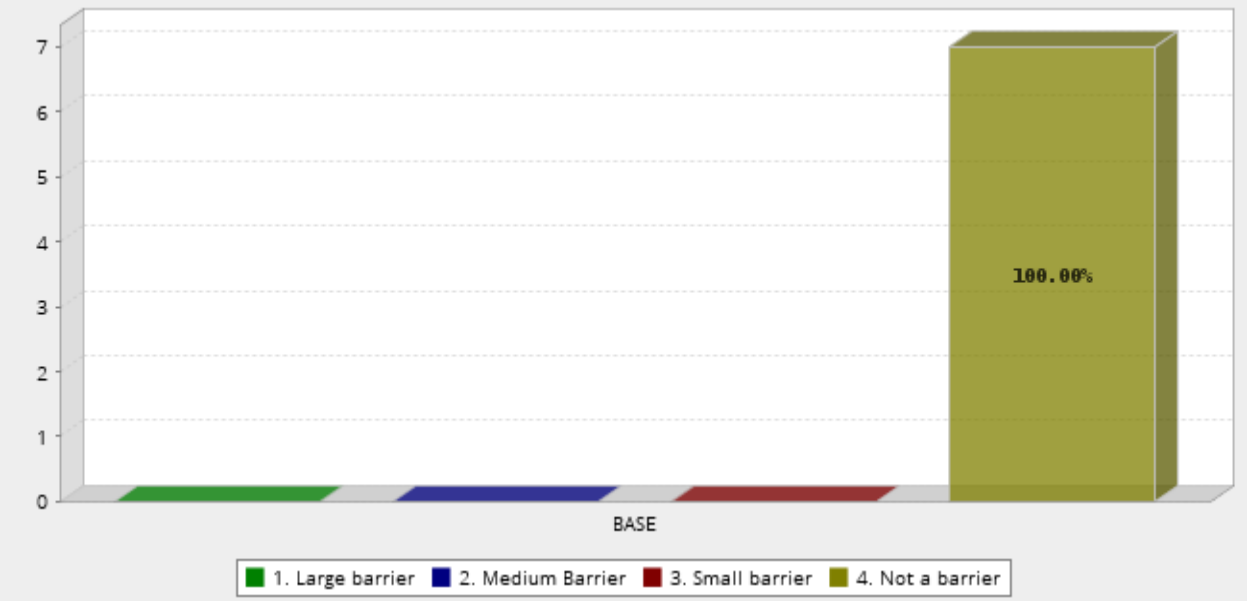
Q14. c. Lack of benefit for my office



	Answer	Count	Percent
1.	Large barrier	0	0.00
2.	Medium Barrier	0	0.00
3.	Small barrier	0	0.00
4.	Not a barrier	7	100.00
	Total	7	100.00

Mean: 4.000	Confidence Interval @ 95%: [4.000 - 4.000]	Standard Deviation: 0.000	Standard Error: 0.000

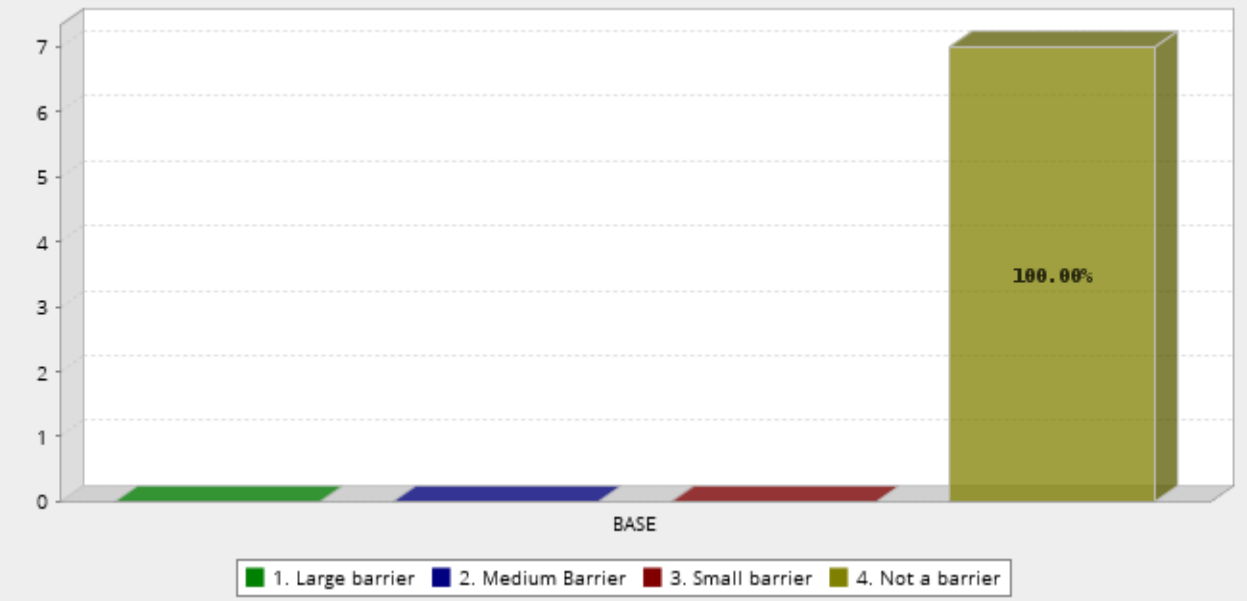
Q14. d. Support staff not being allowed to access the system under my account



	Answer	Count	Percent
1.	Large barrier	0	0.00
2.	Medium Barrier	0	0.00
3.	Small barrier	0	0.00
4.	Not a barrier	7	100.00
	Total	7	100.00

Mean: 4.000	Confidence Interval @ 95%: [4.000 - 4.000]	Standard Deviation: 0.000	Standard Error: 0.000

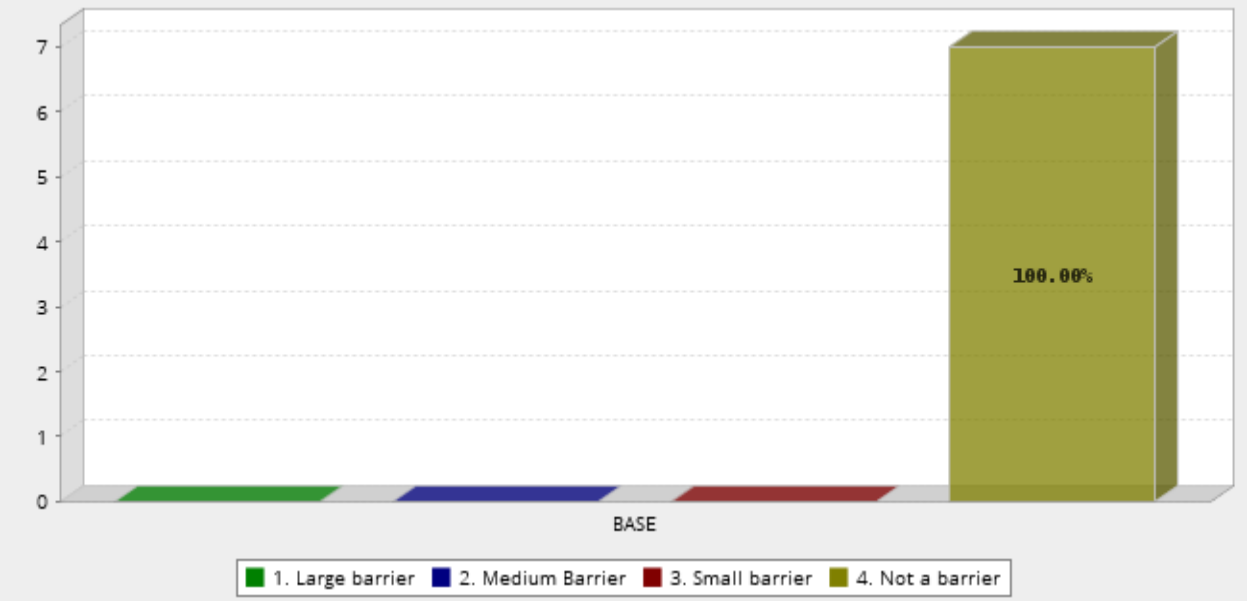
Q14. e. Lack of training on how to use the PDMP



	Answer	Count	Percent
1.	Large barrier	0	0.00
2.	Medium Barrier	0	0.00
3.	Small barrier	0	0.00
4.	Not a barrier	7	100.00
	Total	7	100.00

Mean: 4.000	Confidence Interval @ 95% : [4.000 - 4.000]	Standard Deviation: 0.000	Standard Error: 0.000

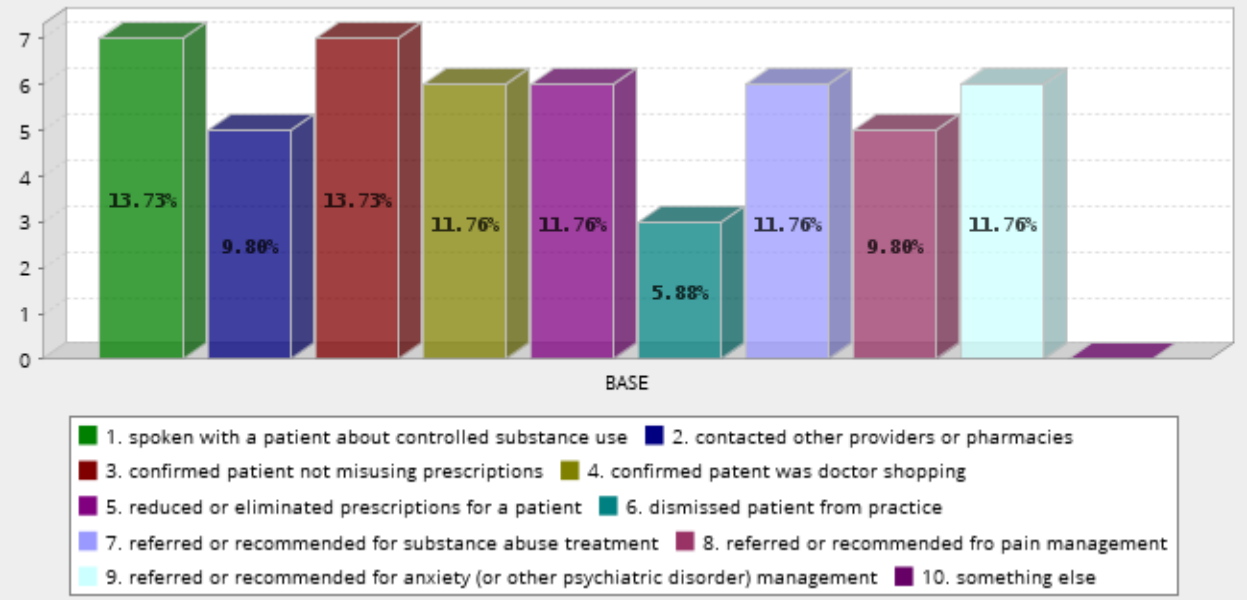
Q14. f. The system is not easy to use



	Answer	Count	Percent
1.	Large barrier	0	0.00
2.	Medium Barrier	0	0.00
3.	Small barrier	0	0.00
4.	Not a barrier	7	100.00
	Total	7	100.00

Mean: 4.000	Confidence Interval @ 95%: [4.000 - 4.000]	Standard Deviation: 0.000	Standard Error: 0.000

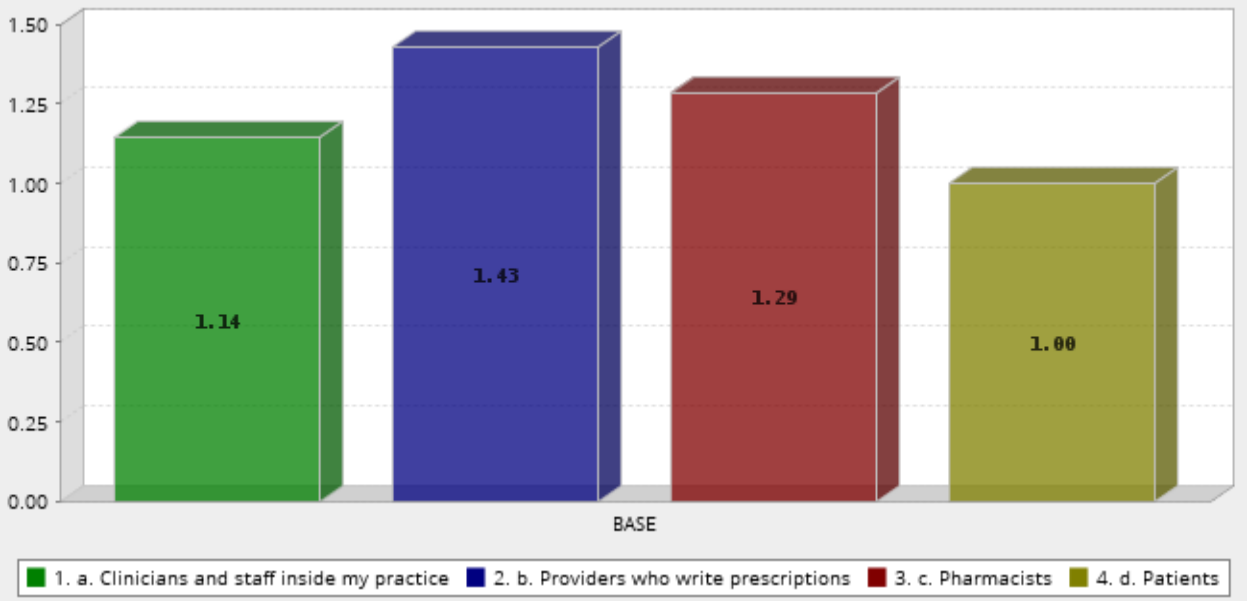
Q15. In the past 30 days, which of the following actions have you taken as a result of using the PDMP system to monitor prescription medications for your patients?* Please check all that apply



	Answer	Count	Percent
1.	spoken with a patient about controlled substance use	7	13.73
2.	contacted other providers or pharmacies	5	9.80
3.	confirmed patient not misusing prescriptions	7	13.73
4.	confirmed patent was doctor shopping	6	11.76
5.	reduced or eliminated prescriptions for a patient	6	11.76
6.	dismissed patient from practice	3	5.88
7.	referred or recommended for substance abuse treatment	6	11.76
8.	referred or recommended fro pain management	5	9.80
9.	referred or recommended for anxiety (or other psychiatric disorder) management	6	11.76
10.	something else	0	0.00
	Total	51	100.00

Mean: 4.824	Confidence Interval @ 95% : [4.090 - 5.557]	Standard Deviation: 2.674	Standard Error: 0.374

Q16. As a result of using the PDMP system, do you communicate more with any of the following groups?

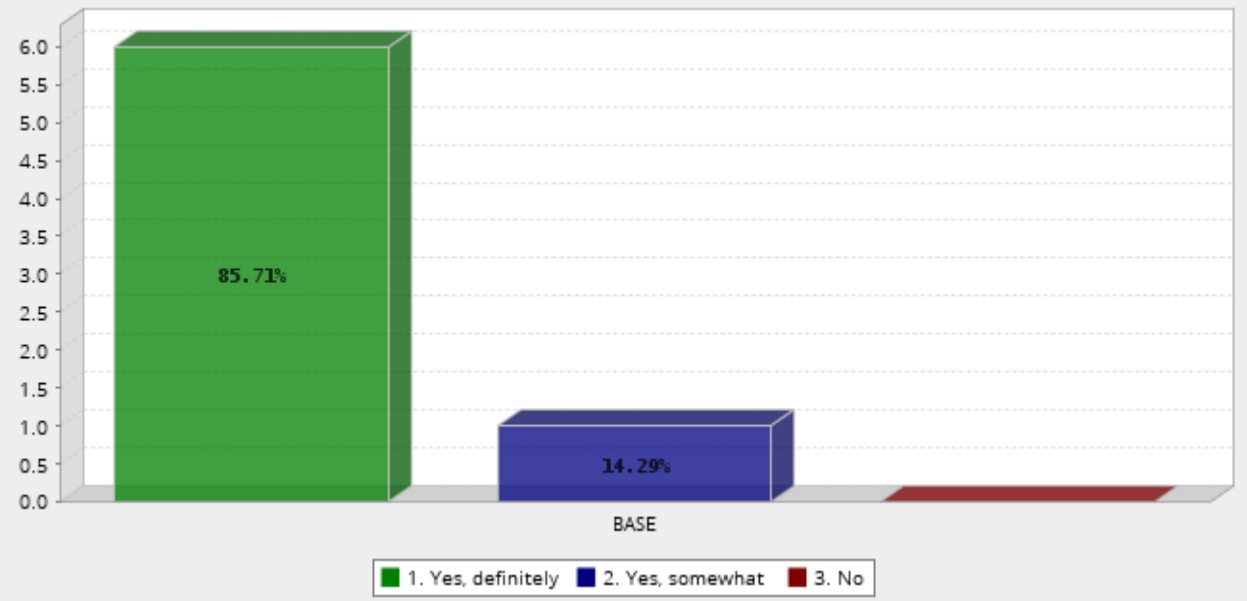


***** Overall Matrix Scorecard: As a result of using the PDMP system, do you communicate more with any of the following groups?**

	Question	Count	Score	
1.	a. Clinicians and staff inside my practice	7	1.143	
2.	b. Providers who write prescriptions	7	1.429	
3.	c. Pharmacists	7	1.286	
4.	d. Patients	7	1.000	
		Average	1.214	

***** individual option analyzed:**

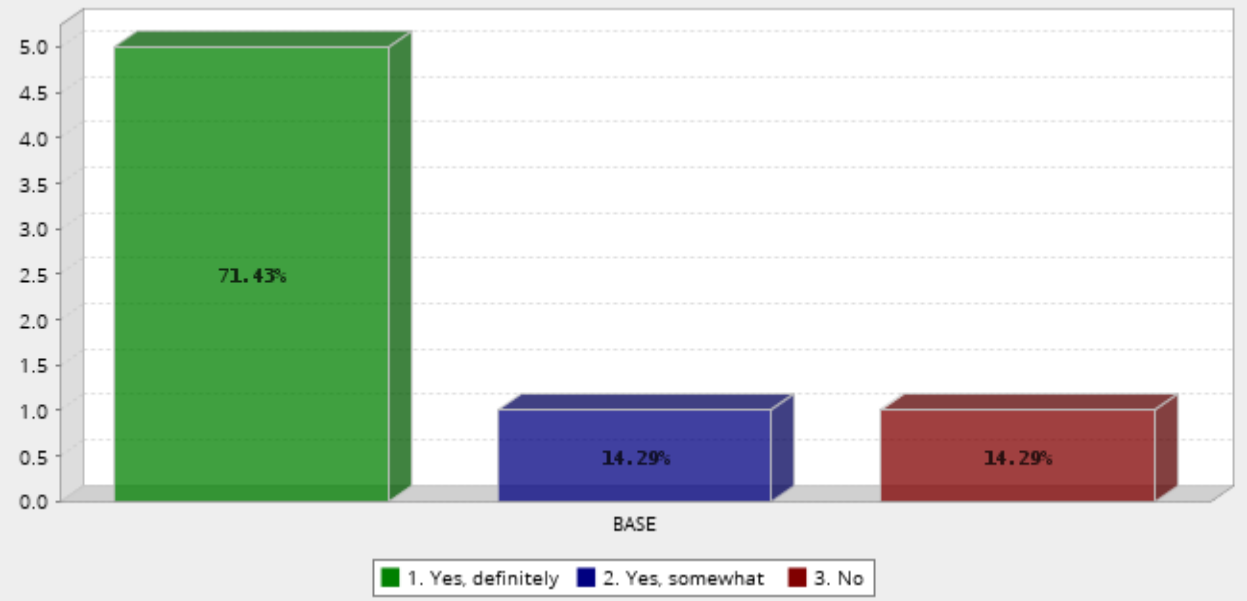
Q16. a. Clinicians and staff inside my practice



	Answer	Count	Percent
1.	Yes, definitely	6	85.71
2.	Yes, somewhat	1	14.29
3.	No	0	0.00
	Total	7	100.00

Mean: 1.143	Confidence Interval @ 95% : [0.863 - 1.423]	Standard Deviation: 0.378	Standard Error: 0.143

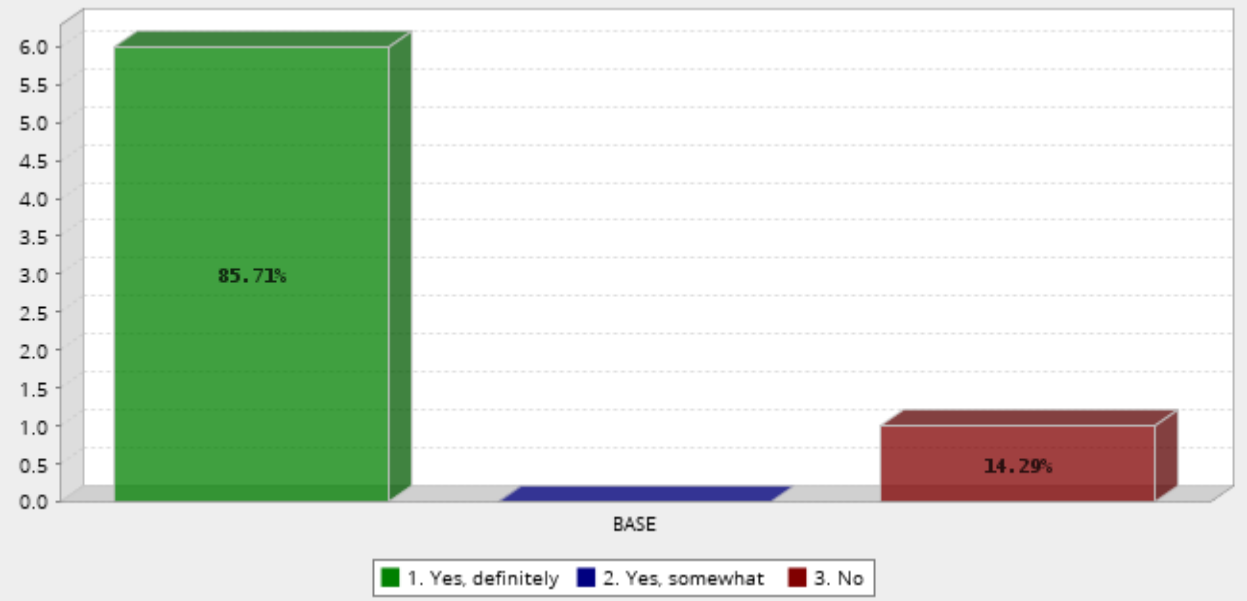
Q16. b. Providers who write prescriptions



	Answer	Count	Percent
1.	Yes, definitely	5	71.43
2.	Yes, somewhat	1	14.29
3.	No	1	14.29
	Total	7	100.00

Mean: 1.429	Confidence Interval @ 95% : [0.846 - 2.011]	Standard Deviation: 0.787	Standard Error: 0.297

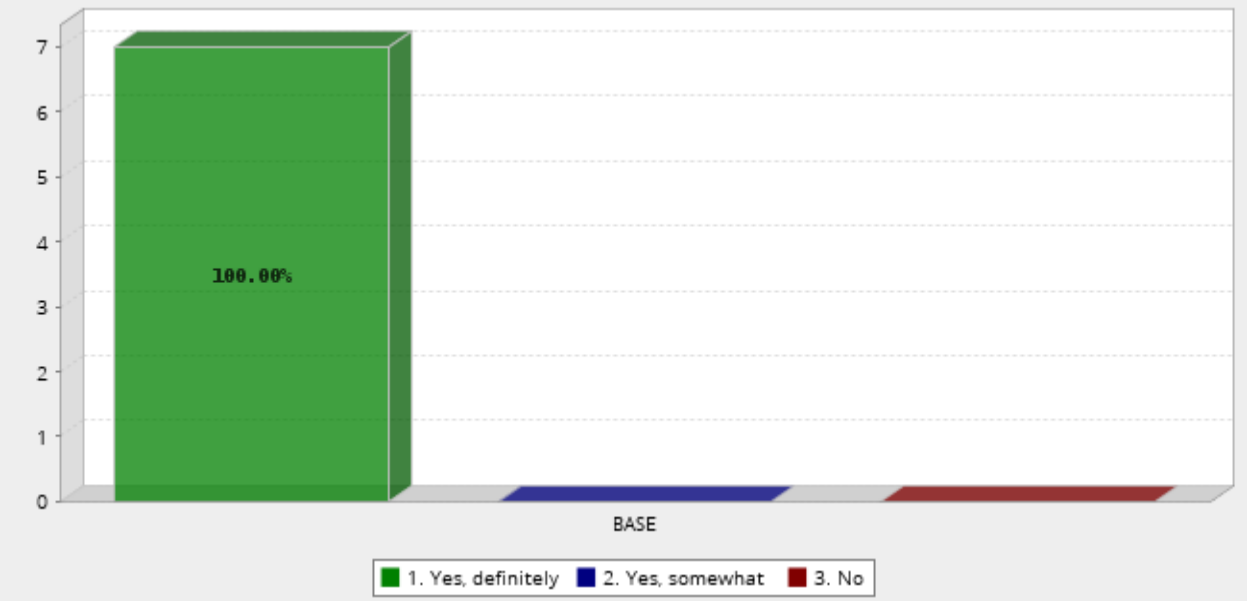
Q16. c. Pharmacists



	Answer	Count	Percent
1.	Yes, definitely	6	85.71
2.	Yes, somewhat	0	0.00
3.	No	1	14.29
	Total	7	100.00

Mean: 1.286	Confidence Interval @ 95% : [0.726 - 1.846]	Standard Deviation: 0.756	Standard Error: 0.286

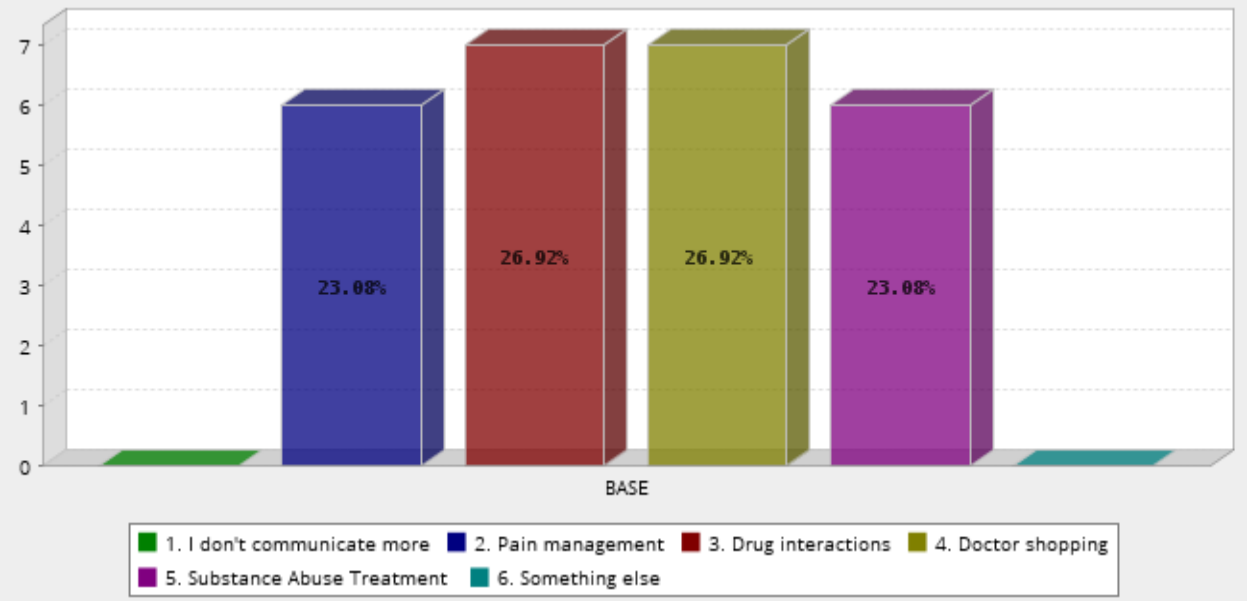
Q16. d. Patients



	Answer	Count	Percent
1.	Yes, definitely	7	100.00
2.	Yes, somewhat	0	0.00
3.	No	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

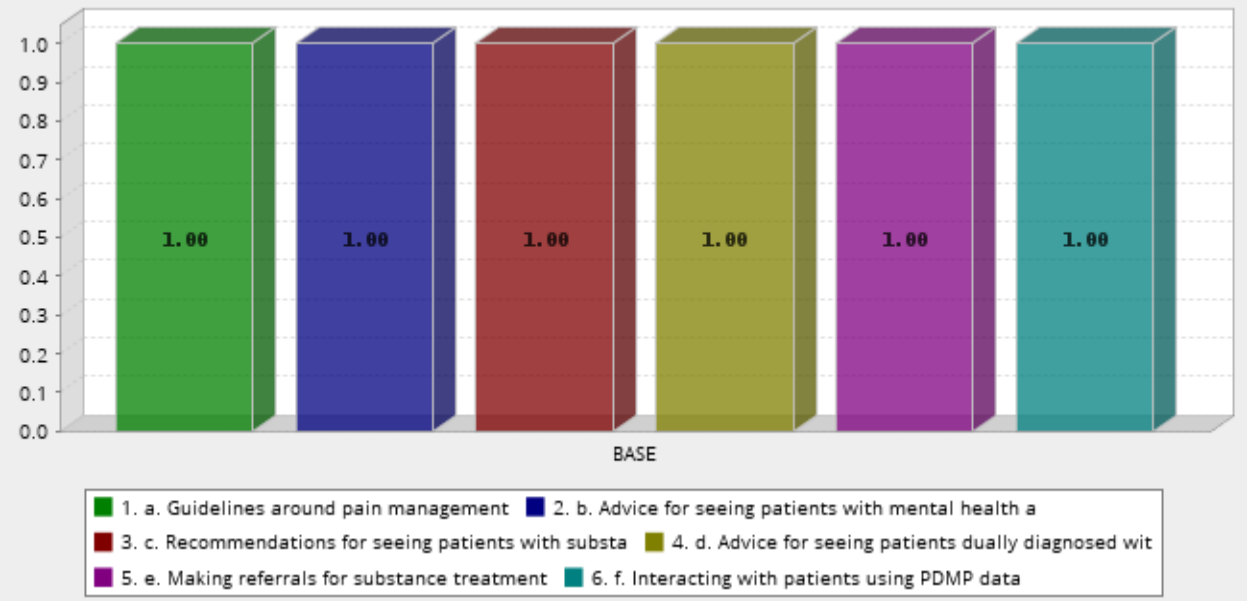
Q17. About which of the following topics do you communicate more with any of these groups? * Please check all that apply.



	Answer	Count	Percent
1.	I don't communicate more	0	0.00
2.	Pain management	6	23.08
3.	Drug interactions	7	26.92
4.	Doctor shopping	7	26.92
5.	Substance Abuse Treatment	6	23.08
6.	Something else	0	0.00
	Total	26	100.00

Mean: 3.500	Confidence Interval @ 95% : [3.075 - 3.925]	Standard Deviation: 1.105	Standard Error: 0.217

Q18. How useful would any of the following categories be as additional resources on the PDMP website? * Please check all that apply.

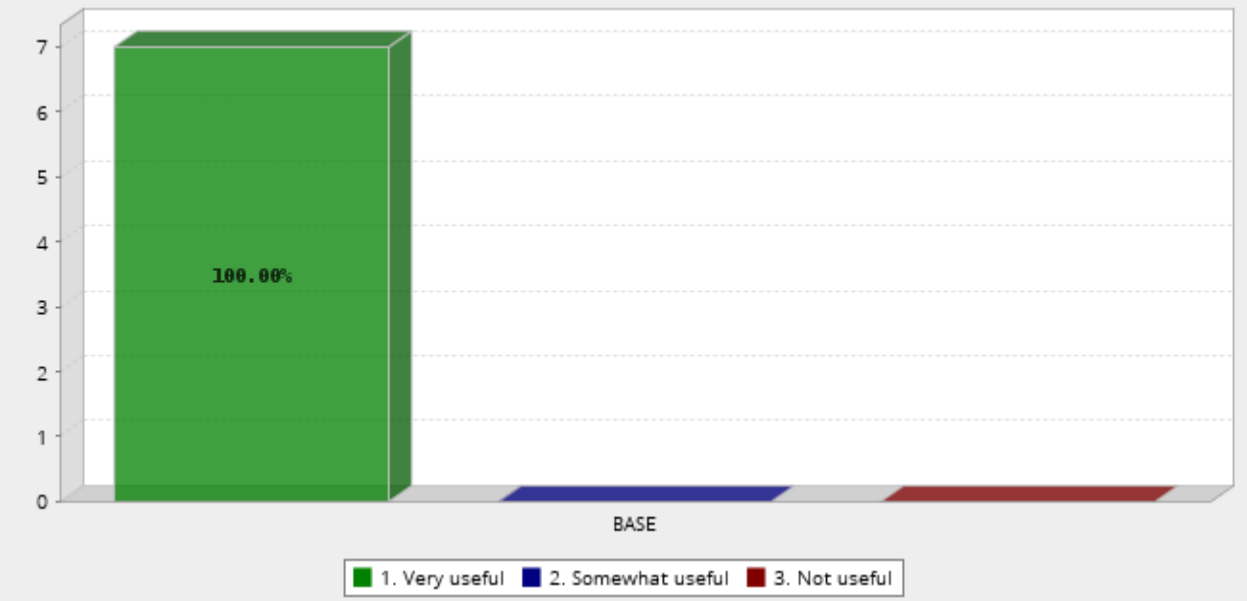


***** Overall Matrix Scorecard: How useful would any of the following categories be as additional resources on the PDMP website? * Please check all that apply.**

	Question	Count	Score	
1.	a. Guidelines around pain management	7	1.000	
2.	b. Advice for seeing patients with mental health and substance abuse issues	7	1.000	
3.	c. Recommendations for seeing patients with substance abuse problems	7	1.000	
4.	d. Advice for seeing patients dually diagnosed with mental health and substance abuse issues	7	1.000	
5.	e. Making referrals for substance treatment	7	1.000	

6.	f. Interacting with patients using PDMP data	7	1.000	
		Average	1.000	

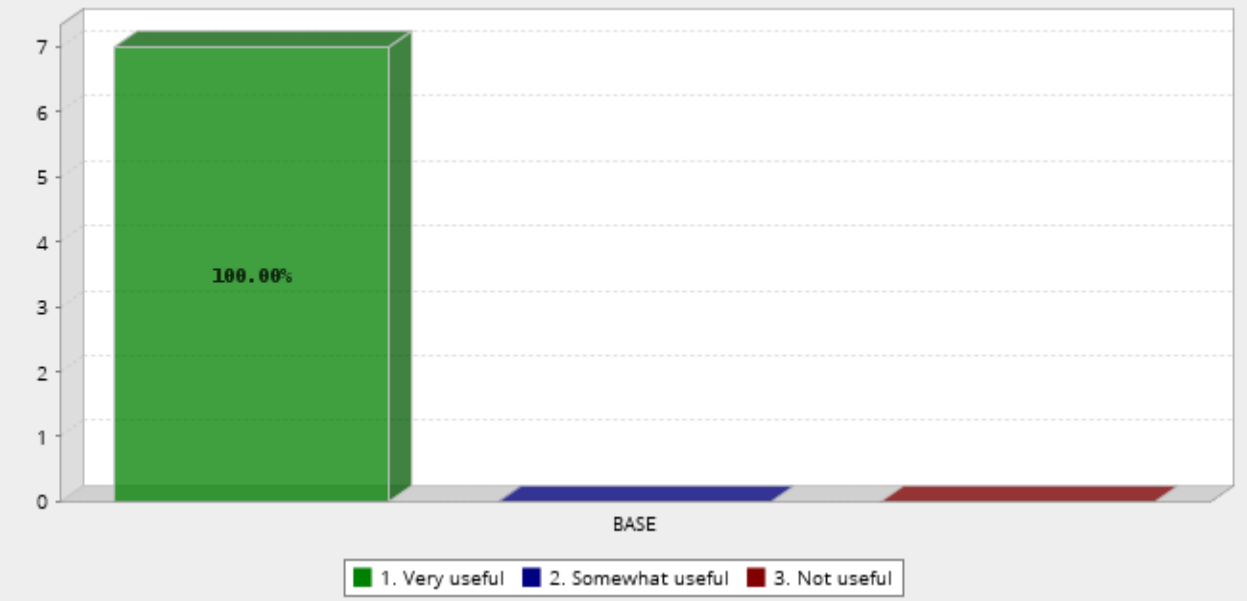
Q18. a. Guidelines around pain management



	Answer	Count	Percent
1.	Very useful	7	100.00
2.	Somewhat useful	0	0.00
3.	Not useful	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

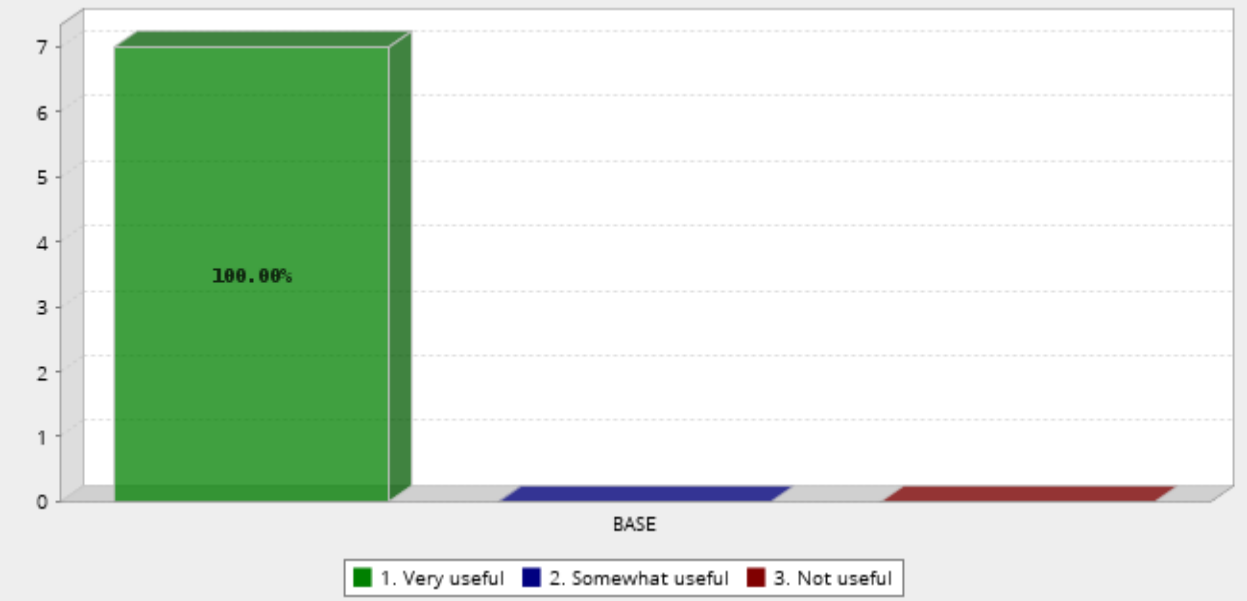
Q18. b. Advice for seeing patients with mental health and substance abuse issues



	Answer	Count	Percent
1.	Very useful	7	100.00
2.	Somewhat useful	0	0.00
3.	Not useful	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

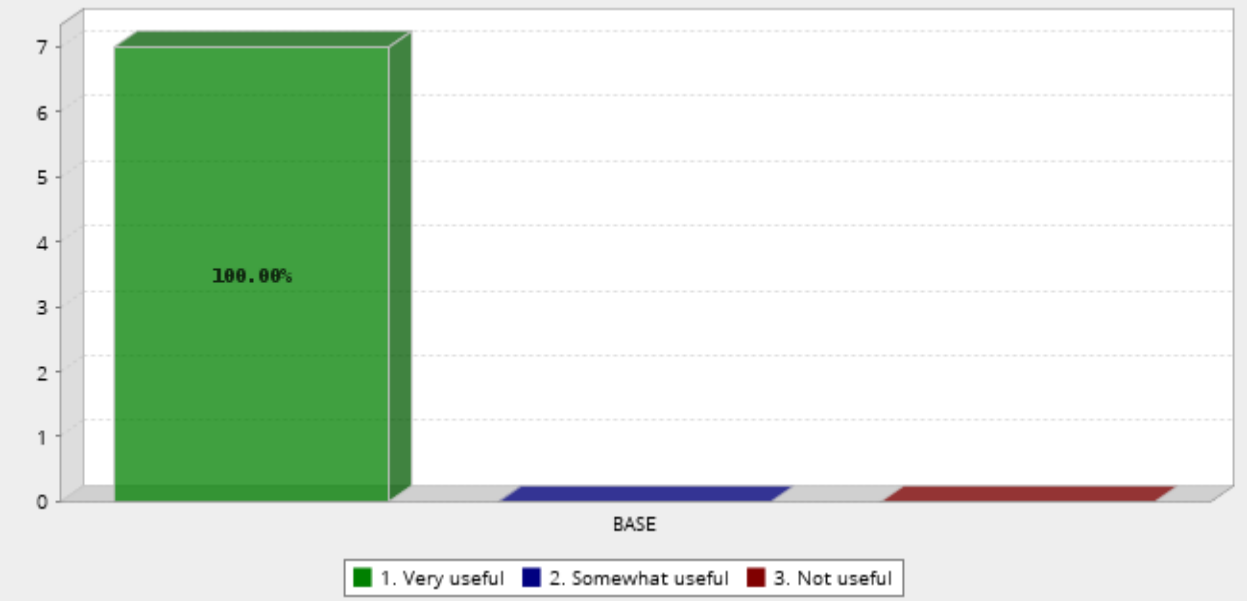
Q18 c. Recommendations for seeing patients with substance abuse problems



	Answer	Count	Percent
1.	Very useful	7	100.00
2.	Somewhat useful	0	0.00
3.	Not useful	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

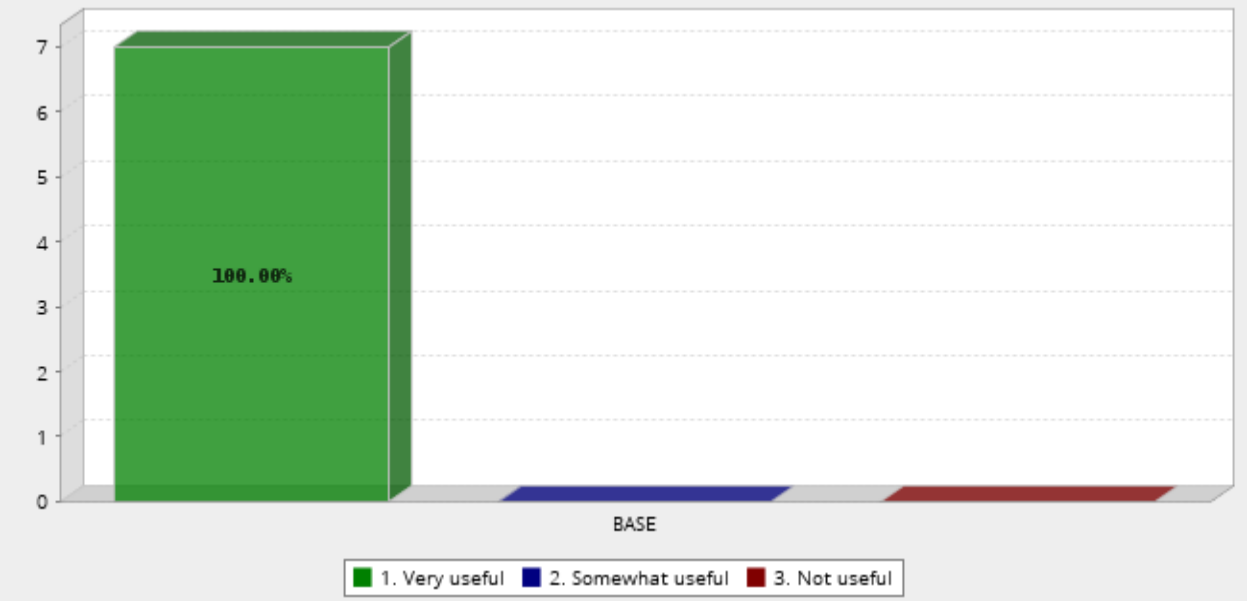
Q18. d. Advice for seeing patients dually diagnosed with mental health and substance abuse issues



	Answer	Count	Percent
1.	Very useful	7	100.00
2.	Somewhat useful	0	0.00
3.	Not useful	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

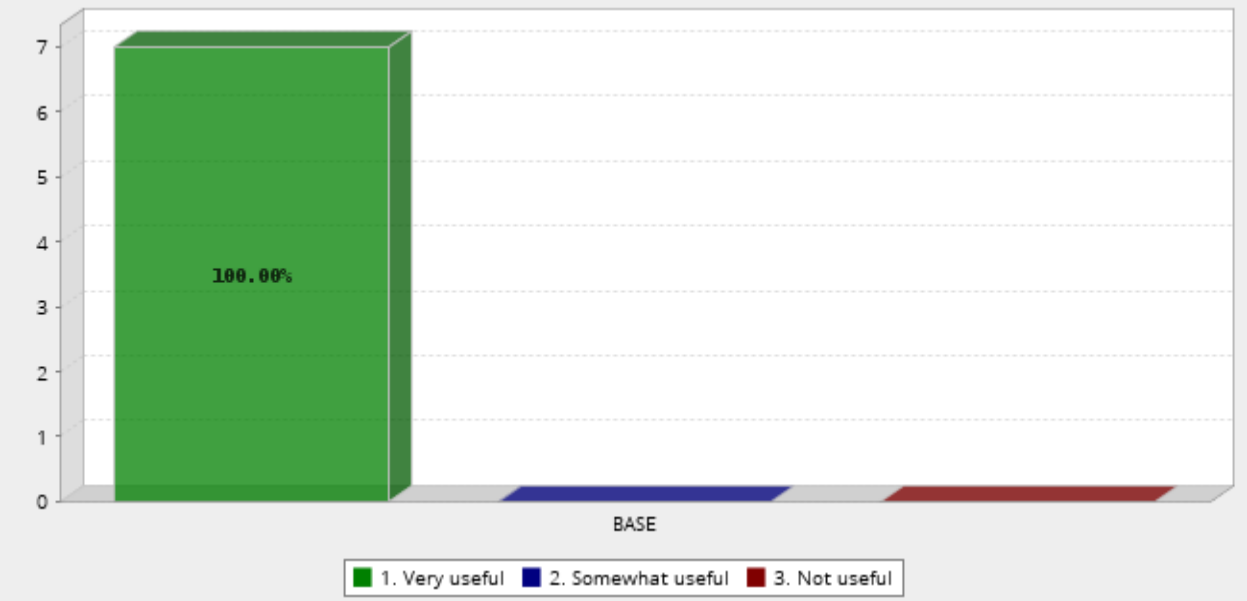
Q18. e. Making referrals for substance treatment



	Answer	Count	Percent
1.	Very useful	7	100.00
2.	Somewhat useful	0	0.00
3.	Not useful	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

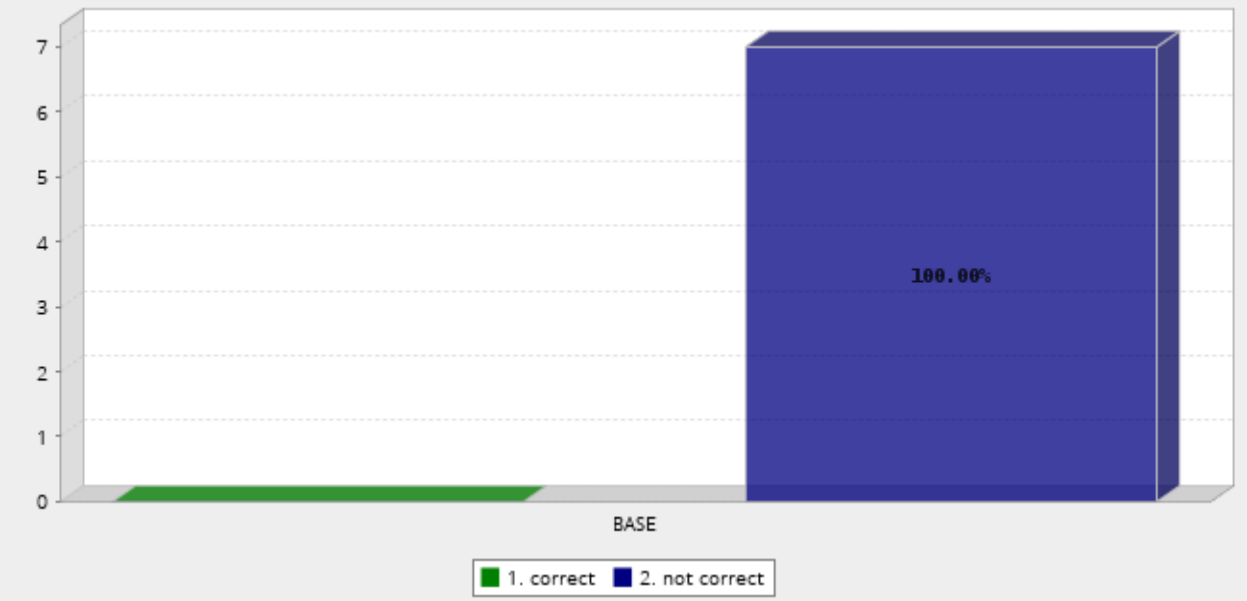
Q18. f. Interacting with patients using PDMP data



	Answer	Count	Percent
1.	Very useful	7	100.00
2.	Somewhat useful	0	0.00
3.	Not useful	0	0.00
	Total	7	100.00

Mean: 1.000	Confidence Interval @ 95% : [1.000 - 1.000]	Standard Deviation: 0.000	Standard Error: 0.000

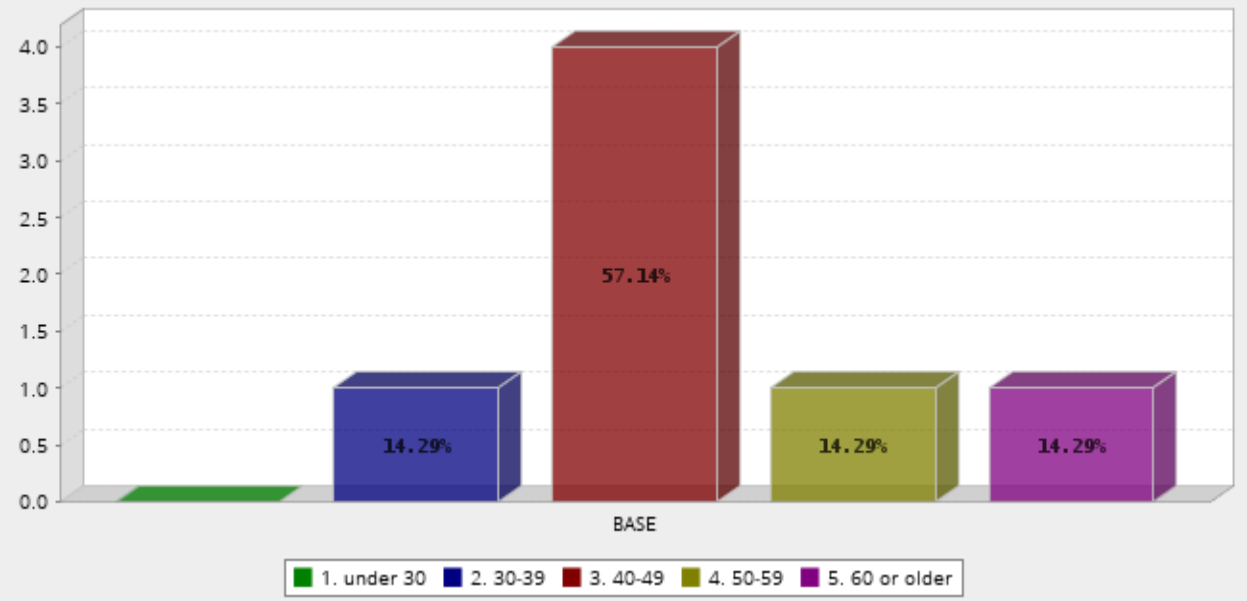
Q19. You received this version of our survey because our records show that you have not registered online as a user. Is that correct?



	Answer	Count	Percent
1.	correct	0	0.00
2.	not correct	7	100.00
	Total	7	100.00

Mean: 2.000	Confidence Interval @ 95% : [2.000 - 2.000]	Standard Deviation: 0.000	Standard Error: 0.000

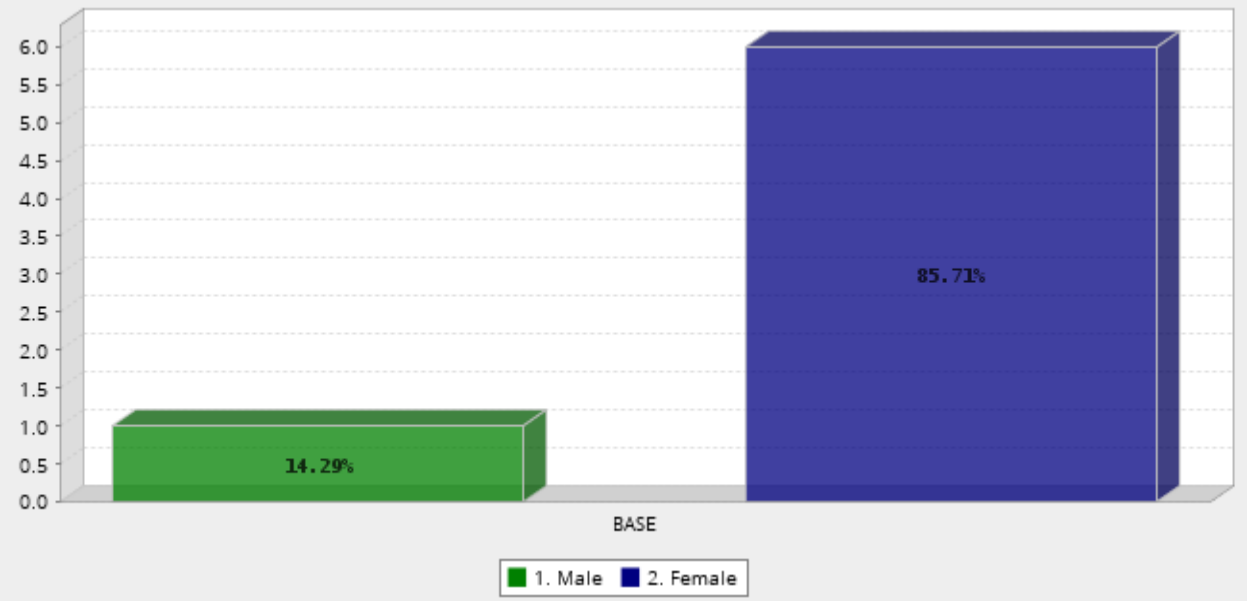
Q20. What is your age?



	Answer	Count	Percent
1.	under 30	0	0.00
2.	30-39	1	14.29
3.	40-49	4	57.14
4.	50-59	1	14.29
5.	60 or older	1	14.29
	Total	7	100.00

Mean: 3.286	Confidence Interval @ 95% : [2.581 - 3.990]	Standard Deviation: 0.951	Standard Error: 0.360

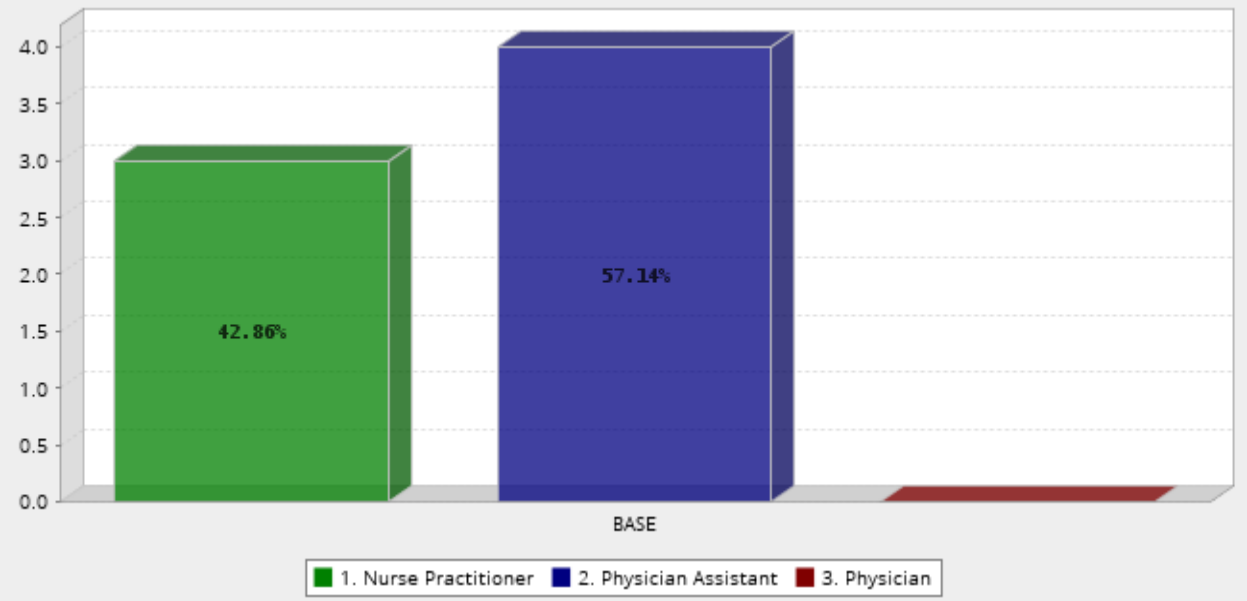
Q21. What is your gender?



	Answer	Count	Percent
1.	Male	1	14.29
2.	Female	6	85.71
	Total	7	100.00

Mean: 1.857	Confidence Interval @ 95% : [1.577 - 2.137]	Standard Deviation: 0.378	Standard Error: 0.143

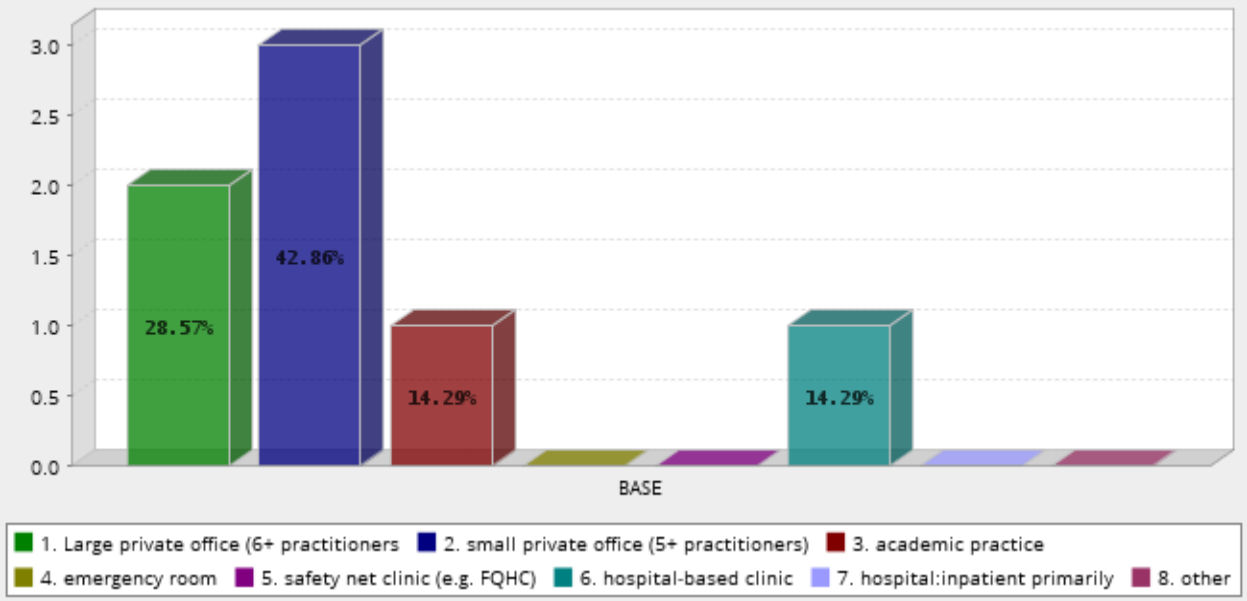
Q22. What is your profession?



	Answer	Count	Percent
1.	Nurse Practitioner	3	42.86
2.	Physician Assistant	4	57.14
3.	Physician	0	0.00
	Total	7	100.00

Mean: 1.571	Confidence Interval @ 95% : [1.175 - 1.967]	Standard Deviation: 0.535	Standard Error: 0.202

Q23. What best characterizes your practice?



	Answer	Count	Percent
1.	Large private office (6+ practitioners	2	28.57
2.	small private office (5+ practitioners)	3	42.86
3.	academic practice	1	14.29
4.	emergency room	0	0.00
5.	safety net clinic (e.g., FQHC)	0	0.00
6.	hospital-based clinic	1	14.29
7.	Hospital inpatient primarily	0	0.00
8.	other	0	0.00
	Total	7	100.00

Mean: 2.429	Confidence Interval @ 95% : [1.156 - 3.701]	Standard Deviation: 1.718	Standard Error: 0.649