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Evidence-Based Strategies To Minimize Risk For Opioid Pain Medication Misuse Among Patients With Chronic Pain In A Primary Care Setting

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The University of Southern Mississippi

EVIDENCE-BASED STRATEGIES TO MINIMIZE RISK FOR
OPIOID PAIN MEDICATION MISUSE AMONG PATIENTS WITH
CHRONIC PAIN IN A PRIMARY CARE SETTING

by

Carolyn Diane Coleman

Abstract of a Capstone Project
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Nursing Practice

May 2015

ABSTRACT

EVIDENCE-BASED STRATEGIES TO MINIMIZE RISK FOR
OPIOID PAIN MEDICATION MISUSE AMONG PATIENTS WITH
CHRONIC PAIN IN A PRIMARY CARE SETTING

by Carolyn Diane Coleman

May 2015

Background: Prescription opioid pain medication misuse has become a nationwide epidemic. Many states have implemented prescription drug monitoring programs (PDMP) to assist in combating the problem of prescription opioid pain medication misuse. Evidence-based clinical practice guidelines as well as the PMDP should be utilized by healthcare providers to guide treatment of chronic pain with opioid pain medications. *Purpose:* The purpose of this doctoral capstone project was to determine if providers are accessing the Prescription Drug Monitoring Program (PDMP) and utilizing evidence-based guidelines to minimize opioid pain medications misuse among patients with chronic pain in a primary care setting. *Method:* This project consisted of a retrospective chart review of prescribers' documentation in the medical record to determine if the PDMP was accessed and if evidence-based protocols were used when prescribing opioid pain medication to patients diagnosed with chronic pain seen in a primary care clinic. *Results:* Seven (N=7) records that met inclusion criteria for the project were identified for review over a three month time frame. The seven records were all identified to have been seen by a nurse practitioner. All (N=7; 100%) of the charts had a history and physical documented. The PDMP was documented to be accessed on 5 of the 7 records (n=5; 71.4%). Patients were prescribed an opioid pain

medication by the provider less than half (n=3; 42.9%) of the time. *Conclusion:* This doctoral capstone project shows that the providers are documenting components of the history and physical when patients present to a primary care clinic with complaints of chronic pain. Past history of drug abuse and ordering urine drug screens are evidence-based practice recommendations where prescribers have not documented consistently. Accessing the PDMP is another area where it shows the prescribers are not consistently documenting. Implementation of evidence-based guidelines will be imperative in the fight to minimize risk of misuse of opioid pain medications among patients with chronic pain in the primary care setting.

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TABLE OF CONTENTS

ABSTRACT.....ii

ACKNOWLEDGMENT.....iv

LIST OF TABLES.....vi

LIST OF ABBREVIATIONS.....viii

CHAPTER

I. INTRODUCTION.....1

 Background and Significance

 Needs Assessment

 Relevant Review of the Literature

 Framework (Theoretical Background)

 DNP Essentials

 Evaluation Plan

II. METHODS.....25

 Setting

 Population

 Design

 Procedures

 Data Analysis

III. RESULTS.....32

IV. DISCUSSION.....36

APPENDIXES.....41

REFERENCES.....51

LIST OF TABLES

Table

1.	History and Physicals.....	33
2.	Evidence-Based Guidelines.....	35

LIST OF ABBREVIATIONS

PDMP	Prescription Drug Monitoring Program
MD	Medical Doctor
DO	Doctor of Osteopathy
NP	Nurse Practitioner
FNP	Family Nurse Practitioner
PA	Physician Assistant
DNP	Doctorate of Nursing Practice
EMR	Electronic Medical Record
EBCP	Evidence Based Clinical Practice

CHAPTER I

INTRODUCTION

Prescription drug misuse is a growing problem in the primary care setting. The use of prescription drugs in a manner other than as directed is considered drug misuse. Drug abuse is the use of a prescription drug in a manner that deviates from the approved medical, legal, or social standards (Federation of State Medical Boards [FSMB], 2004). When prescription drugs are consumed in an excessive amount and injures the body, it is considered an overdose (FSMB, 2004). According to the Centers for Disease Control and Prevention (CDC), deaths from prescription drug overdose have drastically risen over the past decade and have become the leading cause of death among the different types of overdoses in the United States (Centers for Disease Control and Prevention [CDC], 2014). With nearly 100 million Americans presenting with the complaints of chronic pain, according the Institute of Medicine (IOM), pain has become a public challenge (Institute of Medicine [IOM], 2011). In a response to the 2001 Joint Commission's standard on undertreated pain, opioid pain medications began to be prescribed to treat chronic pain (Broglio & Cole, 2014). Many of these patients present to their primary care providers who may not have the proper training or tools for managing chronic pain (Broglio & Cole, 2014). With the increase in opioid pain medication being prescribed for chronic pain came the misuse of the opioid pain medications (Broglio & Cole, 2014). Nearly 100 people died of drug overdoses from prescription drug misuse daily in the year 2007, which shows a three-fold increase in the death rate from 1991. (Paulozzi, Jones, Mack, & Rudd, 2011). Prescription opioid pain medications contribute to prescription drug misuse because patients will sometimes take doses that are higher than what is needed in order to obtain a euphoric high (Worley, 2012). Prescription opioid pain

medications are also sold illegally to persons for whom the medication is not prescribed for purposes of getting a euphoric high (Worley, 2012).

Opioid pain medications are controlled substances that are subject to special regulatory requirements under the federal Food and Drug Administration Controlled Substances Act of 1970 (FSMB, 2004). Opioid pain medications are compounds that bind to an opioid receptor in the central nervous system and include medications such as hydrocodone, morphine, fentanyl, or oxycodone (FSMB, 2004). The scheduling of controlled substances into classes V, IV, III, and II are special regulatory requirements for prescribing opioid pain medications (U.S. Food and Drug Administration [U.S. FDA], 2009). The special regulatory requirements exist to prevent misuse and abuse of opioid pain medication prescriptions written for individuals by healthcare providers. Providers may not have the proper training to manage chronic pain, when chronic pain is one of the most common reasons patients present to the primary care clinic (Liebschutz & Alford, 2011). Providers in primary care settings prescribe opioid pain medications for individuals with chronic pain. Misuse of prescribed opioid pain medications is a concern in primary care settings, especially in the state of Mississippi (Dobbs, Byers, & Fleming, 2013). Many states in the U.S. have utilized Prescription Drug Monitoring Programs (PDMP) to address the issue of prescription drug misuse. PDMP databases track controlled substance prescribing by healthcare providers and allow providers to track prescriptions for opioid pain medications filled by patients and report concerns to the appropriate law enforcement agencies (Fishman, 2012). The PDMP was implemented to facilitate the collection, analysis, and reporting of information on the prescribing and dispensing of controlled substances (FSMB, 2004).

Although PDMP databases are not a complete solution to the prescription drug misuse problem, fully funding PDMP so they are real-time, interstate, and incorporated into the electronic health records (EHR) will identify patients that are doctor shopping and recognize potential prescription drug abusers (*Drug Abuse*, 2013). Doctor or prescriber shopping occurs when patients attempt to obtain controlled substances from multiple prescribers without the knowledge of the individual prescribers (CDC, 2014). Healthcare providers that are prescribers of opioid pain medications should utilize tools such as the PDMPs to identify drug misuse but also implement guidelines to assist with other methods of pain control when appropriate. Guidelines to steer patients toward alternative measures should be implemented as a start to combating the problem of misuse of opioid pain medications. Preventing misuse of prescription drugs by properly prescribing opioid pain medications for patients with a diagnosis of chronic pain may lead to improved health outcomes while maintaining proper pain control. As healthcare delivery moves towards patient-centered and outcomes-based care, combatting this growing problem of prescription drug misuse will be essential for maintaining wellness in patients with chronic pain that are seen in primary care settings in Mississippi

Background and Significance

Prescription drug misuse. Prescription drug misuse has become a nationwide epidemic with deaths quadrupling since 1999 (CDC, 2011). Emergency room visits due to prescription drug misuse have increased 114% in 2011, with 2.5 million emergency room visits as a result of drug misuse and 6,748 people treated in emergency departments daily for the misuse of drugs. Another 1.4 million are treated in emergency departments for prescription drug misuse (*Highlights of DAWN report*, 2011). There were 458.3 emergency room visits per 100,000 population due to the misuse of prescription drugs

with 134.8 visits per 100,000 population due to opioid pain medications in the year 2011 (*Highlights of DAWN*, 2011). The highest reported emergency room visits in 2011 for opioid pain medications misuse was due to the misuse of oxycodone (*Highlights of DAWN*, 2011).

Adults and teens in community counties as well as soldiers and veterans who survive serious injuries are at higher risk of misusing prescription drugs and overdosing (Mississippi State Department of Health [MSDH], 2014). The elderly population accounts for approximately one quarter of prescription drugs sold in the United States yearly (Culberson & Ziska, 2008); however, it is difficult to estimate the prevalence of prescription drug misuse among the elderly population. It has been determined that up to eleven percent of older women misuse and/or abuse prescription drugs (Culberson & Ziska, 2008). The elderly are more prone to have complaints of chronic pain, insomnia, and anxiety leading to being treated with prescription drugs. It is also noted that misuse of prescription pain medication in occupational injuries is becoming an epidemic in worker's compensation cases in the state of Mississippi (MSDH, 2014).

Prescription drug overdose and death. An estimated 71,000 children under the age of 18 years visited an emergency room as a result of prescription medication overdose between 2004 and 2005 (CDC, 2014). The lowest death rates in the United States were among children less than 15 years of age due to the fact there are less incidents of prescription drug use among this age group (CDC, 2014). It is also reported that 40% of calls reported to the poison centers between 2004 and 2005 for children under the age of six are related to prescription drug overdose (CDC, 2014). One hundred and fourteen people died daily in 2011 in the United States as a result of drug overdose

(Centers for Disease Control and Prevention [CDC], 2014). According to the Centers for Disease Control and Prevention, deaths from prescription drug overdose have surpassed traffic-related deaths in 2009 as the leading cause of death in the United States (CDC, 2014). The age of highest death rates for prescription drug misuse in the United States lie between 45 and 49 years of age and occur among American Indians/Alaska Native, followed by whites then blacks (CDC, 2014). While these are alarming national statistics on drug overdose and death, the death rate from the misuse of prescription opioid pain medications is mainly related to unintentional overdoses of these prescription opioids. This project will focus on the problem of opioid pain medication misuse among patients with chronic pain in primary care settings in Mississippi.

Prescription drug misuse, overdose, and deaths in Mississippi

The number of prescription drug overdose deaths in Mississippi, tripled from 1999 to 2013 (*Drug Abuse*, 2013). Mississippi has the 30th highest prescription drug overdose mortality rate in the United States, with 11.4 per 100,000 fatalities (*Drug abuse*, 2013). The number of deaths from unintentional prescription drug overdose in the state of Mississippi has increased 10-fold since 1990 (MSDH, 2013). The number of deaths have increased from 23 in 2009 to 232 in 2011 (MSDH, 2013). The number of unintentional prescription drug overdoses have consistently remained the highest in the 45-54 year old age group in the state of Mississippi (MSDH, 2013). Prescription drug misuse accounted for 90% of the overdose deaths in Mississippi in 2012, mostly accidental (MSDH, 2014). While these statistics from various sources using diverse time spans may appear to be different, the overall message is that the misuse of prescription opioid pain medication has reached epidemic levels.

In community health primary care clinics in Mississippi, the misuse of prescription opioid pain medication is attributed to a ten-fold increase in death (Dobbs, et al. 2013). In the month of January 2013, there were approximately 180,000 individual prescriptions for hydrocodone products prescribed in Mississippi with over 10 million unit doses or pills dispensed (MSDH, 2013). In the state of Mississippi, this large number of pills would be sufficient to dose every man, woman, and child in the state more than three doses of hydrocodone during that month (MSDH, 2013). In a response to the increasing number of prescription controlled substances the state of Mississippi has implemented a web-based prescription drug monitoring program to monitor the prescribing and dispensing of controlled substances, such as the opioid pain medications.

Prescription drug monitoring programs. Many states have utilized prescription drug monitoring programs (PDMP) to address the issue of prescription drug misuse and state laws have also been implemented to help combat the increasing epidemic of prescription drug misuse. States have adopted laws such as requiring ID or permitting the pharmacy to require an ID prior to dispensing controlled substances, expansion for coverage of substance abuse programs, mandatory usage of prescription drug monitoring programs by prescribers, and Good Samaritan Laws which give immunity or mitigation of sentencing to persons seeking help for themselves (*Drug abuse*, 2013). These laws all serve as an attempt to decrease mortality rates, decrease the number of individuals who misuse prescription medications, and deter doctor shopping.

In the state of Mississippi, the PDMP report alerts the prescriber to possible prescription drug misuse. The PDMP, web-based tool was designed to comply with the National All Schedules Prescription Electronic Reporting Act of 2005 and is managed

through the Board of Pharmacy in the state of Mississippi (Dobbs et al., 2013). The PDMP tracks the number of dosage units, the different providers who have prescribed opioids to certain patients, and the pharmacies where the patients have had their prescriptions filled (Dobbs et al., 2013). The Board of Medical Licensure changed its Administrative code to require all prescribing physicians and physician assistants to be registered with the PDMP by December 31, 2013 (Dobbs et al., 2013). The MBOML changes also require educational hours to be completed every two years related to prescribing, with an emphasis on controlled substances (Dobbs et al., 2013). According to the positions statement posted to the MS Board of Nursing's website as of December 2014 the board will require all advanced practice nurses to be registered with the Board of Pharmacy's PDMP and recommends usage when prescribing controlled substances (Mississippi Board of Nursing [MSBN], 2014). Other changes have been implemented to deter prescription opioid drug abuse. As of October 2014 hydrocodone has been moved from a scheduled III to schedule II making prescribing excessive amounts less likely and restricting refills (Dobbs et al., 2013).

Although laws vary widely from state to state, the state of Mississippi scored five out of ten on the *New Policy Report Card of Promising Strategies to Help Curb Prescription Drug Abuse* (Drug abuse, 2013). Mississippi's regulatory boards have implemented state regulations that require all prescribers to register with the Board of Pharmacy's PDMP. According to the MS State Statues 73-21-127, 73-21-97, and 73-21-103, Mississippi has implemented guidelines for PDMP and has an active program running ("Cumulative supplement to MS code," 2007). Mississippi has also implemented doctor shopping laws that specify that patients are prohibited from withholding

information about prior prescriptions from their healthcare providers (Dobbs et al., 2013). Mississippi also has pharmacy lock-in programs which require patients under the state's Medicaid program who are suspected of misusing controlled substances to use a single prescriber and pharmacy to obtain medications (Dobbs et al., 2013). And lastly, Mississippi requires or recommends continuing education hours for providers prescribing opioids (Dobbs et al., 2013). There are also guidelines requiring healthcare providers to physically examine patients or have a bona fide patient-physician relationship before prescribing a controlled substance. These steps should be followed when encountering patients that present to the primary care clinic with complaints of chronic pain.

Accessing the PDMP prior to prescribing prescription opioid pain medications should alert a prescriber to opioid pain medications that have been obtained from other prescribers. This project will look at the usage of the PDMP along with evidence-based practice guidelines for treatment of chronic pain by prescribers in an attempt to minimize prescription opioid pain medication misuse in a primary care clinic in the state of Mississippi.

Chronic pain. According to the Institute for Clinical Systems Improvement, chronic pain is defined as pain without biological value that has persisted beyond the normal time despite the usual customary efforts to diagnose and treat the original condition and injury (Hooten et al., 2013). Chronic pain affects at least 116 million adults in the United States and up to \$635 billion each year is spent on medical cost and lost productivity due to chronic pain (Hooten et al., 2013). In the primary care setting approximately 5-33% of the patients present with a complaint of chronic pain (Hooten et al., 2013). Patients with chronic pain present to the primary care clinic with complaints

of low back pain, headaches, neck pain, and fibromyalgia (Hooten et al., 2013).

Evidence-based clinical practice (EBCP) guidelines for treatment of chronic pain require prescribers to take a full history and physical and assess functioning when patients present to the primary care clinic with complaints of pain. EBCP guidelines for treating pain state the goals for treating pain should include more than prescribing prescription pain medications, but also measures to improve the patient's functioning ability (Hooten et al., 2013).

Prescription pain medication. Opioid pain medications are a class of medications used to treat chronic pain. The mechanism of action for opioid pain medications is the opioid compound binds to opioid receptors in the nervous system causing depression of the nervous system and skeletal muscle relaxations (FSMB, 2004). Adverse effects of opioid pain medications are nausea, vomiting, sedation, cognitive impairments respiratory depression, and even death (FSMB, 2004). In addition, opioids have addiction-forming or addiction sustaining liability or are capable of conversion into a drug having such addiction-forming or addiction-sustaining liability (U.S. FDA, 2009).

Indirect and direct healthcare costs related to opioid pain medications are related to misuse, abuse, addiction, dependence, overdose, and death. In a research of claims data and other publicly available surveys and secondary sources, Birnbaum et.al looked at the costs to society of opioid abuse, dependency, and misuse in the United States (Birnbaum et al., 2011). Costs were grouped in three categories: healthcare, workplace, and criminal justice (Birnbaum et al., 2011). Workplace costs were approximately \$25.6 billion or 46% of the total cost and were driven by lost earnings and reduced compensations (Birnbaum et al., 2011). Healthcare costs were approximately \$25.0

billion or 45% of the total costs and consisted of medical and prescription costs (Birnbaum et al., 2011). With criminal costs consisting of \$5.1 billion or 9% of the total costs and were comprised of correctional facility and police costs (Birnbaum et al., 2011). Data were obtained from private insurance as well as Medicaid claims data. The study concluded that prescription drug misuse bears a large financial burden on society and as the prevalence increase the societal economic burdens will also increase (Birnbaum et al., 2011). The changes to healthcare in the Affordable Care Act, providing efficient, cost effective care will be crucial factors in the primary care setting. Reimbursement will be associated with patient outcomes and the quality of care provided.

Properly prescribing treatments for pain control improves delivery of healthcare and outcomes for patients with chronic pain. Increasing education of healthcare providers should ensure that providers properly prescribe prescription opioid pain medications and give prescribers a better understanding of how prescription opioid pain medications can be misused (*Drug Abuse*, 2013). Accessing the PDMP allows prescribers to be informed on prescriber-shopping behaviors in patients with complaints of chronic pain and allow prescribers to make proper decisions when prescribing treatments for pain control. As patients present to the primary care settings with complaint of chronic pain, prescribers should be utilizing evidence-based practice guidelines as well as the PMDP to guide treatment of chronic pain.

Deaths from prescription opioid pain medication misuse have steadily increased over the past decade. Many states have implemented prescription drug monitoring programs to assist in combating the problem of prescription drug misuse. Prescribers in the primary care health care clinic include physicians and nurse practitioners. Nurse

practitioners that are prepared with a practice focused doctorate degree, the Doctor of Nursing Practice (DNP), are prepared to lead change in practice setting through organizational and systems leadership for quality improvement. Using the Plan Do Study Act (PDSA) model for quality improvements, this capstone project will show continuous improvements in the quality of patient outcomes while minimizing the risk of prescription drug misuse. Evaluating and implementing evidenced-based protocols to minimize the risk of prescription opioid pain medications is within the scope of practice of a DNP prepared nurse practitioner. This capstone project conducted by a family nurse practitioner (FNP) in a DNP program will focus on providers in a primary health clinic in the state of Mississippi and determine if the providers are utilizing EBCP guidelines including accessing the PDMP to minimize the risk of opioid pain medication misuse by patients with a diagnosis of chronic pain.

Needs Assessment

While working as a FNP in a community based primary care setting in central Mississippi, several patients presented to the clinic with complaints of chronic pain requesting prescriptions for opioid pain medications. A survey of providers, physicians and nurse practitioners, revealed similar experiences with no clear directions on prescribing of opioid pain medications, leaving prescribers to rely on clinical judgments and past experiences. Although the state of Mississippi has an active PDMP, most providers at the clinic were not registered with the PDMP, or if registered, were not accessing the reports. There were also no clear evidence-based guidelines for prescribing opioid pain medication in the clinic; therefore, prescriber were left to use their clinical knowledge and expertise.

Further evaluation included reviewing, over a 12 month period, medical records of patients who presented to the clinic with reports of chronic pain using diagnosis codes 338.2 (chronic pain), 338.21 (chronic pain due to trauma), and 338.29 (other chronic pain) who received a prescription from a provider for opioid pain medication. The 12 month review revealed 125 patients who had a diagnosis of chronic pain and were prescribed an opioid pain medication. Of the patients with a diagnosis of chronic pain the distribution of males and females were essentially equal (n=62 males; 49.6% and n=63 females; 50.4 %). Forty-two or approximately 34% of the patients were between the ages of 45-54 years of age. The results of the medical review was presented to the key stakeholders of the organization who agreed to proceed with the implementation of educating the providers on using evidenced-based protocols to treat patients with chronic pain seen in the primary care clinic to minimize the risk of prescription opioid pain medication misuse. As a DNP student and full-time prescriber in the clinic, implementing the evidence-based protocols would improve the quality of patient outcomes in the clinic. While providing education on EBCP guidelines for prescribing opioid pain medications for chronic pain, prescribers' attitudes toward using the PDMP were explored and barriers to use were identified. Steps to alleviate the barriers to accessing the PDMP were put in place. The results of the educational intervention were presented to the medical director and approval was obtained to determine providers' use of the PDMP and the impact of accessing the PDMP on proper prescribing of opioids.

The problem. As patients seek care in primary care settings with complaints of chronic pain, healthcare providers' first thoughts are to treat the patient with a prescription for an opioid pain medication. Sometimes this will lead to repeat offenders

returning multiple times with similar or the same complaints looking for continued prescription refills of opioid pain medication. Every effort should be made to find alternative treatments, especially when patterns are noted. A comprehensive history including accessing the PDMP should be taken and a complete physical examination should be conducted to ensure proper prescribing. It is important that patients receive pain-relieving medications when needed, with proper dosing (beginning with the lowest dose and titrating for pain relief) and quantities (Fishman, 2012).

The DNP prepared nurse practitioner should be ready to take on the problem-of prescription drug misuse and work with others in the health care arena to devise solutions, formulate plans and guidelines, and come to the table to have changes implemented. Once a systematic review of the literature is conducted, evidence-based guidelines can be implemented to improve patient and system outcomes. For this DNP project, the PICOT question to be addressed was: In patients that present to a primary care clinic with a diagnosis of chronic pain and request prescriptions for opioid pain medications, how does accessing the PDMP and utilizing evidence-based guidelines prior to prescribing treatment compared to not using the PDMP and evidence-base guidelines minimize the risk of opioid misuse?

Relevant Review of the Literature

Data sources accessed for this study include the following databases: CINAHL, Cochrane Database, MEDLINE, PsycARTICLES, PsychINFO and evidence-based treatment guidelines. Key terms used in the review of the literature were: opioid pain medication, PDMP, chronic pain, provider prescribing habits, evidence-based guidelines, mitigation strategies

Prescription drug monitoring programs. In a systematic literature review of eleven peer reviewed research articles, an investigation of Prescription Drug Monitoring Programs (PDMPs) use, implications to practice, and barriers were explored (Worley, 2012). In this study eleven peer reviewed research articles were identified and reviewed. The researcher identified four themes: PDMPs effect on prescribing opioids, PDMPs effects on prescribing benzodiazepines, multiple provider use and patient characteristics, and healthcare professional's perspectives on PDMPs (Worley, 2012). On conclusion of the review it was noted that are few research studies done on this subject (Worley, 2012). It was confirmed that the use of PDMPs limits doctor shopping and reduces prescription drug misuse (Worley, 2012). Further research is needed to determine the frequency that prescribers use PDMPs, barriers to its use, and what interventions would increase usage of PDMPs (Worley, 2012).

In a study performed by Reigler et.al, the question was asked whether prescription drug monitoring programs impact opioid misuse. In this observational study data from a poison center and an opioid treatment center were used to observe whether there were changes in the surveillance data after implementation of a prescription monitoring program (Reigler et al., 2012). The result of the study showed PDMPs are effective in decreasing prescription opioid misuse (Reigler et al., 2012). The data showed the increase of intentional exposures and also the increase of admissions to treatment centers to be much lower in states where PDMPs had been implemented (Reigler et al., 2012).

In a briefing on PDMP performed by the PDMP Center of Excellence at Brandeis University, concluded that the use of PDMPs are effective in improving clinical decision making and improved patient outcomes ("Briefing on PDMP," 2014). The revised

version of the briefing contained over 60 references that includes research studies, evaluations, surveys, reports, and data to support these conclusions ("Briefing on PDMP," 2014). The briefing also states that the PDMP will become more effective as prescribers continue to use evidence-based best practices ("Briefing on PDMP," 2014).

Treatment modalities for chronic pain. The Institute for Clinical Systems Improvement (ICSI) provided recommendations for improved treatments for patients with complaints of chronic pain (Hooten et al., 2013). According to the recommendations it is important to look at the problem of prescription drug misuse from a clinical as well as an operational viewpoint (Hooten et al., 2013). Processes should be developed to allow patients to see dedicated prescribers who should work collaboratively with other healthcare providers, such as dentists and specialists to coordinate care (Hooten et al., 2013). Policies should be implemented to monitor and maintain opioid agreements prior to prescribing an opioid pain medication (Hooten et al., 2013). Education to prescribers for referring patients to other disciplines such as pain management clinic should be implemented (Hooten et al., 2013). According to the ICSI chronic care teams that include prescribers, pharmacy, behavioral health, physical therapy, and pain management should also be implemented when treating patients with complaints of chronic pain (Hooten et al., 2013). While patients should have a pain assessment conducted prior to providing treatment for pain relief, the goal of treatment should be the improvement of overall functioning, not simply to give pain medication (Hooten et al., 2013). Examples of tools to assess for pain and functioning may include the Brief Pain Inventory (BPI) or the Physical Functional Ability Questionnaire (FAQ5) (Hooten et al., 2013).

Prescription drug misuse and abuse recognition. Obtaining a good history and physical is one of the major determinants of risk for misuse of opioid pain medications (FSMB, 2004; “Guidelines for prescribing opioids”, n.d.). Obtaining the history and physical can clue a prescriber into past history of misuse. The history should include a past medical, family/social and past medical history including history of mental health problems and substance abuse. (“Guidelines for prescribing opioids”, n.d.). Assessing the nature and intensity of pain, assessing the effect of pain on daily functioning and quality of personal life, also assessing the past history of opioid use are all areas to alert a prescriber into clues for possible risk of misuse (Fishman, 2012). Any comorbid conditions should be identified as well as psychological and mental health histories (Fishman, 2012). Obtaining the complete and thorough history and physical could lead to improved identification of patients at risk for prescription opioid pain medication misuse.

Culberson and Ziska (2008) studied the misuse of prescription drugs in the elderly by reviewing the literature of studies previously reported. Unsafe amounts of medications obtained by older adults are usually not obtained for the reasons of “getting high”, but instead by seeking prescriptions from multiple physicians or doctor shopping, by stockpiling medications over a period of time, (Culberson & Ziska, 2008). Therefore prescription drug abuse for the elderly is different than for younger persons (Culberson & Ziska, 2008). According to Culberson and Ziska (2008) there is not a validated screening instrument designed to identify or assess for prescription drug abuse in the elderly. Although they did look at the Severity of Dependence Scale for use as a screening instrument for benzodiazepine dependence when looking at elderly patients who use

benzodiazepines (Culberson & Ziska, 2008). Elderly patients with symptoms such as anxiety, pain, and insomnia are at risk for prescription drug abuse, although illicit drug use is rare among the elderly (Culberson & Ziska, 2008). Other causes of misuse/abuse can be contributed to inappropriate prescribing or poor monitoring by health care professionals (Culberson & Ziska, 2008). It is generally uncommon for prescription drug abuse among elderly patients who have no history of substance abuse problems (Culberson & Ziska, 2008). This study of 565 geriatric psychiatric patients concluded that elderly individuals with social isolation, depression, and history of substance abuse are at increased risk of prescription drug abuse (Culberson & Ziska, 2008). It also notes that the development and validation of screening instruments and treatment guidelines for prescription drug abuse in the elderly may aid in the appropriate use of prescription medications (Culberson & Ziska, 2008).

Prescribing opioid pain medication. In a cohort study by Dunn et al., pharmacy data were obtained and medical records were reviewed and analyzed to study estimated rates of opioid overdose. This study sought persons who received 3 or more opioid prescription for noncancerous pain within a ninety day period (Dunn et al., 2010). The authors selected 9940 people who started long-term opioid therapy and followed them for forty-two weeks (Dunn et al., 2010). Of those who were selected in the study, 61% of the participants completed the study, 32% left during the study, and 7% died (Dunn et al., 2010). There were six fatal opioid-related overdoses and 74 non-fatal overdoses during the study (Dunn et al., 2010). Dunn et al. found the overdose rate for persons 65 years and older was greater than the overdose rate of younger adults (Dunn et al., 2010). The results of the study showed patients receiving higher doses of prescription opioid

medications in higher doses were at a higher risk of overdosing than persons receiving a lower dosage (Dunn et al., 2010). Although there were limitations to the study it could not be established whether overdose risk differences were directly related to dosages or patient characteristics (Dunn et al., 2010). Dunn et al. states further studies are needed to understand the specific determinants of overdose risk in patients receiving long-term opioid therapy (Dunn et al., 2010). It also suggests that persons receiving long-term opioid therapy should be closely monitored and careful instructions on appropriate use of medications (Dunn et al., 2010).

The Centers for Disease Control and Prevention, the National Center for Injury Prevention and Control, along with the National Institute on Drug Abuse (NIDA) and the Substance Abuse and Mental Health Services Administration (SAMHS), and the Office of the National Coordinator for Health Information Technology (ONC), together reviewed and compared eight guidelines to identify common areas for recommendations for prescribing opioids for chronic pain (CDC, n.d.). Common elements found in all eight guidelines include:

- Conducting a physical exam, pain history, past medical history, and family/social history
- Conducting urine drug testing
- Considering all treatment options, weighing the risks and benefits of prescribing opioids
- Starting patients on the lowest effective dose
- Implementing pain treatment agreements
- Monitoring pain and treatment progress with documentation

- Using safe and effective methods for discontinuing opioids (CDC, n.d., para. 6).

In a systematic review by Nuckols et al. (2014), guidelines were screened for prescribing opioids utilizing an appraisal of 1132 unique records. Recommendations from 13 guidelines were abstracted assessing dosing limits, medications and formulations, titration of dose, switching from one opioid to another, drug-to-drug interactions, and risk mitigation strategies (opioid risk assessment tools, written treatment agreements, and urine drug testing). Thirteen guidelines on using opioids to treat chronic pain were evaluated for quality related to mitigating risks for overdose and misuse (Nuckols et al., 2014). Although the guidelines were derived from various clinical emphasis and backgrounds, common themes emerged from the evaluation (Nuckols et al., 2014). The guidelines generally agreed on the following issues: need for caution in prescribing doses greater than 90 to 200 mg of morphine equivalents per day, having knowledgeable clinicians when managing methadone, recognizing risks associated with fentanyl patches, titrating with caution, and reducing doses by 25-50% when switching from one opioid to another (Nuckols et al., 2014).

Guidelines for prescribing opioids established by the Federation of State Medical Boards (FSMB) state a medical history and physical must be obtained, evaluated, and documented in the medical record when prescribing opioids (FSMB, 2004). The guidelines state there should be a written treatment plan with objectives to determine treatment success, such as improved physical functioning (FSMB, 2004). Once opioids are prescribed, the prescriber should adjust drug therapy to each patient's individual needs, which could include other treatment modalities such as a rehabilitation program

(FSMB, 2004). The prescriber should periodically review the patient's treatment plans and their progress towards the objectives and modify treatment as needed (FSMB, 2004).

If progress is unsatisfactory, the prescriber should assess the appropriateness of the current treatment plan and consider other therapeutic modalities (FSMB, 2004).

Prescribers should be willing to refer patients for additional evaluations and treatments for the management of their chronic pain (FSMB, 2004). The medical record should include the following:

- Medical history and physical
- Diagnostic, therapeutic, and laboratory results
- Evaluations and consultations
- Treatment objectives
- Discussion of risks and benefits
- Informed consent
- Treatments
- Medications
- Instructions and agreements, and
- Periodic reviews. (FSMB, 2004)

Risk mitigation strategies. Risk mitigation strategies should be implemented when prescribing opioid pain medications. Risk assessment tools should be used, written treatment agreements should be obtained, and urine drug testing would be helpful when prescribing opioids (FSMB, 2004; Nuckols et al., 2014). The Screener and Opioid Assessment for Patients with Pain (SOAPP) is a tool used by prescribers to help determine a patient's risk for long-term opioid use ("SOAPP," 2008). The SOAPP is a

questionnaire developed to assist prescribers in evaluating patients for relative risk of developing problems from long-term opioid use ("SOAPP," 2008). Patients can be categorized into three different groups based on their SOAPP scores (low, medium, or high) showing their relative risk for problems when being prescribed opioid pain medications ("SOAPP," 2008). It is also noted that the SOAPP is a tool to assess the risk of opioid pain medication misuse and not a lie detector and there may be false positives ("SOAPP," 2008). Other tools that assess for risk include the CAGE, Current Opioid Misuse Measure (COMM), Screening Tool for Addiction Risk (STAR), and Webster's Opioid Risk Tool (ORT).

Informed consent and agreement for treatment should be obtained by the prescriber with the risks and benefits of the use of opioid medications discussed with the patient and/or the patient's family (FSMB, 2004). Patients who are a high risk for misuse should have a written agreement with the provider outlining the patient's responsibilities which may include drug screening when requested, number and frequency of all prescription refills, and reasons for which drug therapy may be discontinued (FSMB, 2004; "Guidelines for prescribing opioids," n.d., para. 6)

In summary the review of literature shows us that the PDMP and implementing evidence-based guidelines are effective in minimizing the risk for prescription opioid pain medication misuse. Prescribers should obtain thorough history and physicals to assess the patients' risk for misuse of opioid pain medications. To assist in assessing for risk, the literature provides risk assessment tools such as the SOAPP or COMM that should be used in combination with other evidence-based guidelines. The literature suggest that inappropriate prescribing contributes to the increasing misuse of prescription

opioid pain medications. The literature shows that care coordination is another area that is key in minimizing misuse of opioid pain medications. Prescribers should be willing to make appropriate referrals to other providers such as physical therapy and mental health providers when patients present to the primary health clinic with complaints of chronic pain. This project will evaluate whether implementing evidence-based guidelines, as shown in the literature review (Appendix A), by providers minimizes the risk for prescription opioid pain medication misuse among patients with chronic pain in a primary care setting.

Framework (Theoretical Background)

This project will utilize a portion of Deming's 14 point model to guide the study. The ability to use statistics to aide in the discovery of root causes to problems, and also to create solutions to manage corrective measures are at the heart of Deming's 14 points of management. Deming's theory creates the consistency for improvement of products and services. The point utilized for this project refers to constantly and forever improve the system of production and service ("The Fourteen Points for Management," 2015). Deming proposed a continuous loop of identifying a problem, changing the process, and re-assessing processes for continuous quality improvements ("The Fourteen Points for Management," 2015).

As a framework, this project will use the Plan-Do-Study-Act to show the continuous cycle of quality improvements. The "Plan" is to evaluate whether prescribers are utilizing evidence-based guidelines which include assessing the PDMP prior to prescribing opioid pain medication. The "Do" consists of the education of the providers on prescription opioid drug misuse, the importance of using evidence-based guidelines which include the PDMP when prescribing opioids, ensuring they are all signed up for

the PDMP. “Study” is the evaluation of whether prescribers are utilizing evidence-based guidelines prior to prescribing opioid pain medication, and “Act” is an evaluation for further needs and the cycle starts over.

DNP Essentials

On completion of this capstone project, the DNP essentials are fully met and listed in Appendix B (American Association of Colleges of Nursing [AACN], 2006). By using evidence-based protocols to implement a change in the prescribing practices of providers in a primary care community health center, the project seeks to minimize the risk of misuse of opioid pain medications in patients with the diagnosis of chronic pain. The use of EMR to access medical records for data gives knowledge of information systems and technology which is essential for the DNP prepared advanced practice nurse. Development of the project gave knowledge in organizational and systems leadership by allowing the evidence-based protocols to be introduced to the community health clinic’s staff and leadership. Introducing the providers to evidence-based healthcare policy improves patient outcomes in the primary care setting and allows the DNP prepared advanced practice nurse to develop strategies to enhance and evaluate healthcare outcomes. Implementing the quality improvement project shows expertise in assessing and identifying organizational and systems issues and facilitates organization-wide changes in prescribing habits. Collaborating with key stakeholders and other providers in the clinic to minimize the risk of prescription opioid pain medications aides in improving patient outcomes. The results of this project will first be submitted to the organization for quality improvements, then possibly other clinics to improve population health.

Evaluation Plan

This project seeks to evaluate whether evidence based guidelines including the Prescription Drug Monitoring Program (PDMP) are utilized by healthcare providers prior to prescribing opioid pain medications in patients diagnosed with chronic pain. The Logic Model in Appendix C demonstrates the evaluation plans for this project.

Assumptions. The assumption is that once educated providers will change their current prescribing habits and adopt more evidence-based practices. It is also assumed that once these guidelines are followed the risk of patients misusing prescription opioids would be minimized by prescribers obtaining thorough history and physicals, obtaining informed consent, urine drug screens, and also accessing the PDMP.

Purpose of the project. The purpose of this doctoral capstone project is to determine if providers are accessing the PDMP and utilizing evidence-based guidelines to minimize opioid pain medication misuse among patients with chronic pain in a primary care setting.

CHAPTER II

METHODS

The purposes of this doctoral capstone project is to determine if healthcare providers are accessing the PDMP and utilizing evidence-based guidelines to minimize opioid pain medication misuse among patients with chronic pain in a primary care setting. The project was implemented after receiving approval from the Institutional Review Board (IRB) at the University of Southern Mississippi (Appendix D).

Setting

The capstone project was conducted in a primary care clinic which serves patients across the lifespan, from infants to older adults. This clinic is located in an urban metropolitan area in central Mississippi and serves patients with all types of health insurance, but a majority of the patients are covered under Medicare and Medicaid. Uninsured patients are also seen and billed for healthcare services according to a sliding scale payment plan. This clinic is a Federally Qualified Health Clinic which exists to provide healthcare to underserved populations. The patient base consists of approximately 60% females and 40% males. The racial/ethnic make up for the population of this community health clinic-up consists of 94% African Americans, 5% Caucasians, and 1% Hispanic or other.

There are a total of 45 full-time employees and 2 part-time contract employees. Of the 47 employees, the clinic employs a total of 13 providers that can prescribe medications: 4 full-time and 1 contract nurse practitioners (NP); 1 full-time physician assistant (PA); and 5 full-time physicians and 1 contract physician (Doctor of Medicine [MD], and 1 Doctor of Osteopathy [DO]) . There are three different clinic locations that fall under this one community health primary care clinic. Data from the EMR will be

collected from all three locations. A letter of support from the organization has been obtained prior to implementing the project (Appendix E)

Population

The subjects for this project comprise a convenience sample of healthcare providers, (physicians, nurse practitioners, and physician assistants) who prescribe an opioid pain medication and provide healthcare to patients between the ages of 45 thru 54 years of age who have a diagnosis of chronic pain. The project included a review of medical records completed by prescribing providers (MD, DO, PA, NP). Male and female patients were identified to include in the project using the Ninth revision of International Classification of Disease (ICD-9) diagnoses codes 338.2 (chronic pain), 338.21 (chronic pain due to trauma), and 338.29 (other chronic pain). Patients 44 years of age and younger or 55 years and older and diagnosed with other types of pain (such as back or neck pain) without a diagnosis code of chronic pain were excluded due to the needs assessment shows the greatness number of patients who presented to the clinic with the diagnosis of chronic pain fell between the ages of 45 to 54 years of age. For the purpose of this project, prescribing providers' progress notes in the electronic medical record (EMR) of patients that meet inclusion criteria were accessed by retrospective chart review. The number of records accessed was determined by the number of patients that may present for services during the data abstracting time period.

Design

The design of the project is descriptive. This project consisted of a retrospective chart review of prescribers' documentation in the medical record to determine if the

PDMP was accessed and if evidence-based protocols were used when prescribing opioid pain medication to patients diagnosed with chronic pain.

Procedures

After obtaining USM IRB approval, a systematic retrospective medical record chart review was conducted to determine whether prescribing providers access the PDMP and use evidence-based guidelines prior to prescribing opioid pain medications to patients with complaints of chronic pain. The project director was a full-time prescriber, family nurse practitioner (FNP), at the community health primary care clinic. Prior to conducting the retrospective chart review, informed consent was obtained by the Project Director (PD) from the provider participants to access and report documentation of evidence-based guidelines in records of patients seen with a diagnosis of chronic pain. After the PD obtained provider consent, the trained data abstractor conducted a retrospective chart review to determine whether prescribing providers access the PDMP and use evidence-based guidelines to minimize a patient's risk for prescription opioid pain medication misuse in a community health primary care setting. The data abstractor is a full-time prescriber, family nurse practitioner (FNP), at the community health primary care clinic.

Electronic medical records (EMR) were accessed by the trained data abstractor who is employed at the community health primary care clinic. Training and education was provided by the PD on documentation that should be included in the medical record when prescribing opioids. Records were abstracted from the selected timeframe of October 1 thru December 31 2014 of patients who presented to the clinic and meet inclusion criteria for data collection. Subject selection was based on patient's age 45 to

54 years with the diagnosis of chronic pain using the ICD-9 diagnoses codes of 338.2, 338.21, and 338.19 during the three month timeframe (Centers for Medicaid and Medicare Services [CMS], n.d.).

EMR access. After logging in to the EMR using a unique protected password, the trained data abstractor, an employee of the clinic, generated a report of patients that met inclusion criteria. The report query was generated by going to the reports menu. Once the reports menu was accessed, the data abstractor entered the reporting criteria, (the age of the patients [age 45-54 years], the reporting period [October 1 2014 thru December 31, 2014], and the diagnoses codes [338.2, 338.21, 338.19] to be associated with each record as described above). When the criteria were entered the generate report tab was used to create a list of patient records that meet the given criteria. The report, although generated at the main clinic, provided information on patients from all three clinics. Once the report was generated, the trained data abstractor printed the report to identify records that were accessed for data extraction. Each patient on the list was assigned a unique identification (ID) number. The identification number was coded on the data collection form (Appendix B). The report with the names of patients that meet inclusion criteria and the data collection form with ID numbers will be kept in a lock drawer in the data abstractor's office at the clinic. During data collection, the patient's medical record was accessed from the list of patients that meet inclusion criteria by entering the patients' name into the EMR.

EMR documentation. Once the progress note in the patient's record was accessed the most recent visit/encounter was reviewed for extraction of whether evidence-based guidelines were utilized including accessing the PDMP. The progress note is the only

section of the EMR that was evaluated for documentation of accessing the PDMP and whether evidence-based guidelines were utilized. Using a data extraction tool (Appendix F) with the patient ID number that matches the ID number on the query report, the most recent visit/encounter's progress note was assessed for the type of prescribing provider (MD, DO, PA, NP) that delivered health care to the patient, documentation of whether the prescriber obtained a complete history and physical, accessed the PDMP, obtained a urine drug screen, and had the patient sign an informed consent/patient agreement. The nature of pain, intensity of pain, past treatment for pain, co-existing medical conditions, effect of pain on physical functioning, and past history of substance abuse were evaluated in the history and physical documentation. The informed consent was evaluated to determine if patient education on risk and benefits of use, an agreement for use of opioids and reason(s) for discontinued prescribing of opioids were documented. The progress note was reviewed to evaluate whether the risk of misuse is minimized as evidence by prescribing providers documentation of whether an opioid pain medication was prescribed; an opioid pain medication dose was lowered; a referral to any other disciplines such as physical therapy or pain management was generated; goals are clearly identified in the medical record; and education was provided.

Data collection. No identifying information will be recorded on the data collection form. Confidentiality of the data were maintained by the utilization of identification numbers (ID) instead of names. Each question was numbered with a dichotomous response. A "yes" answer will be coded as "1", a "no" answer will be coded as "2". Once the information was collected on the data collection tool, the results were documented in an excel spread sheet using codes for each variable. Review and analysis

of de-identified existing data were performed using SPSS procedure crosstabs which is a chi square statistical analysis program. Data were stored under double locks in the office of the trained data abstractor in the clinic by which only the data abstractor had access.

Ethical protection of human subjects. The project consisted of a retrospective chart review with no identifying information. Data were extracted by the data abstractor directly from the progress note in the EMR and no records were printed or copied. Data were recorded and summarized by the trained data collector so that subjects cannot be identified, directly, or through identifiers linked to the subjects. To ensure confidentiality and anonymity, subjects' information was protected through the use of codes assigned by the data abstractor on a data collection form. Data on the generated report and data collection tool were stored under double locks in the office of the trained data abstractor in the clinic by which only the data abstractor had access. The data collection tools were placed in an envelope by the data abstractor and given to the project director (PD) for analysis and completion of the project. Data entered on the data collection tool did not contain any identifying information. Information on the data collection tool was entered into an Excel spreadsheet by the PD in order to maintain confidentiality. Data were stored on a password protected computer. Confidentiality was protected by placing the data collection tools in a locked file box that was kept in the office of the PD and only the PD had access to the locked file box and drawer.

There were minimal risks of harm to subjects associated with this project. The project consisted of a retrospective chart review. The primary subjects are the health care providers, and data on documentation in the patient's EMR was reported in aggregate, no single person was identified. Data are anonymous via de-identification and was protected

using coding, and cannot be associated with individual subjects; therefore, loss of privacy and breach of confidentiality was not a risk. Although the project director knows who the providers are, the association of providers to which data were not accessible. Providers who agreed to participate may fear occupational consequences if they do not participate, but were assured of no consequences for not participating on the consent given prior to participation. Benefits of this project are to improve evidence-based prescribing practices among healthcare providers and minimize opioid pain medication misuse among patients with chronic pain in a primary care setting.

Data Analysis

Data were retrieved through a review of the medical records and extracted using a collection tool created to look at indicators of whether evidence-based protocols are present in the documentation. Dichotomous variables were collected and coded. Information collected with the data extraction tool was entered into an Excel spreadsheet using a unique index identifier to prevent duplication. The answer to each question was coded and entered into the spreadsheet. Once the data collection was completed, the information was analyzed using SPSS procedure crosstabs which is a chi square to determine if prescribers are utilizing evidence-based guidelines to minimize risk of opioid pain medication misuse. Chi square testing was utilized due to the dichotomous “yes” or “no” answers to the data collection tool to count the categories of responses.

CHAPTER III

RESULTS

The purpose of this doctoral capstone project was to determine if providers are accessing the PDMP and utilizing evidence-based guidelines to minimize opioid pain medications misuse among patients with chronic pain in a primary care setting. Seven (N=7) records were identified which met inclusion criteria for the project, patients who presented to the primary care clinic with the diagnosis codes of 338.2 (chronic pain), 338.21 (chronic pain due to trauma), and 338.29 (other chronic pain) and age range between the ages of 45-54 years. Seven providers (3 physicians, 3 nurse practitioners, and 1 physician assistant) consented to have medical records reviewed of patients that were seen that met inclusion criteria. All records abstracted were records that were documented by the 3 nurse practitioners. The physician assistant and physicians did not have any records that met the criteria for inclusion in the study.

The most recent visit/encounter's progress note was assessed for the type of prescribing provider (MD, DO, PA, NP) that delivered health care to the patient, documentation of whether the prescriber obtained a complete history and physical, accessed the PDMP, obtained a urine drug screen, and had the patient sign an informed consent/patient agreement. The history and physical documentation includes the nature of pain, intensity of pain, past treatment for pain, co-existing medical conditions, effect of pain on physical functioning, and past history of substance abuse. The informed consent/patient agreement consists of patient education on risk and benefits of use, an agreement for use of opioids and reason(s) for discontinued prescribing of opioids. The progress note was also reviewed to evaluate whether the risk of misuse is minimized as evidence by prescribing providers documentation of whether an opioid pain medication

was prescribed; an opioid pain medication dose was lowered; a referral to any other disciplines such as physical therapy or pain management was generated; goals are clearly identified in the medical record; and education was provided. The data collection was completed and analyzed using chi square distribution.

History and Physical. All (N=7; 100%) of the charts had a history and physical documented by the providers in the medical record that included the nature of pain, intensity of pain, past treatments of pain, co-existing, and effects of pain on physical functioning . As seen in table 1 below the majority of the records (n=6; 87.5%) had no documentation of past substance abuse.

Table 1

History and physical

Variables		Frequency	Percent
History and Physical	Yes	7	100.0
Nature of pain	Yes	7	100.0
Intensity of pain	Yes	7	100.0
Past pain treatments	Yes	7	100.0
Co-existing conditions	Yes	7	100.0

Table 1 (continued).

Variables		Frequency	Percent
Effect of pain on physical functioning	Yes	7	100.0
Past history of substance abuse	Yes	1	14.3
	No	6	85.7

Prescription Drug Monitoring Program. Documentation of accessing the Prescription Drug Monitoring Program (PDMP) prior to prescribing opioid pain medication was not documented by providers most (n=5; 71.4%) of the time.

Evidence-Based Guidelines. Table 2 shows the results of whether evidence-based guidelines were followed to minimize risk for opioid pain medication misuse. All (N=7; 100%) of the charts were missing documentation of obtaining a urine drug screen prior to prescribing an opioid pain medication and more than half (n=4; 57.1%) of the charts were missing documentation of an informed consent/patient agreement. When patients presented to the clinic with complaints of chronic pain, patients were prescribed an opioid pain medication by the provider less than half (n=3; 42.9%) of the time and if prescribed (N=3; 100%) the dose was not lowered. The majority of the charts reviewed indicated that patients were referred to another discipline (n=4; 57.1%); goals were identified to improve functioning (n=5; 71.4%), and education on safety (n=4; 57.1%) was provided.

Table 2

Evidence-based guidelines

Variables		Frequency	Percent
PDMP accessed	Yes	2	28.6
	No	5	71.4
Informed consent/ Patient Agreement	Yes	3	42.9
	No	4	57.1
Urine drug screen	No	7	100.0
Was an opioid prescribed?	Yes	3	42.9
	No	4	57.1
Was opioid dose lowered?	No	7	100.0
Was patient referred to other discipline?	Yes	4	57.1
	No	3	42.9
Were goals clearly identified?	Yes	5	71.4
	No	2	28.6
Was education documented on safety?	Yes	4	57.1
	No	3	42.9

CHAPTER IV

DISCUSSION

The misuse of opioid pain medications has become an epidemic in the United States. Federal and state governing bodies have implemented evidenced-based guidelines which include accessing the Prescription Drug Monitoring Programs (PDMP) to aide in minimizing opioid pain medication misuse. This capstone project was implemented to evaluate the use of evidence-based guidelines by providers in a primary care setting. While the data shows overall implementation of the guidelines, there is still room for improvement. Although providers are indeed showing great efforts in thoroughly documenting the history and physicals, documentation of the past history of drug abuse has not shown to be an area where the prescribers have documented consistently. The past history of substance abuse should be clearly documented as part of the medical records prior to prescribing opioid pain medications (FSMB, 2004). A patient's history of substance abuse should aide a prescriber in recognizing whether a patient is at risk of misuse of opioid pain medications. Accessing the PDMP is an area where it shows the prescribers are not consistent. The analysis shows that the PDMP was only accessed and documented 28.6% of the time. When prescribing opioid pain medications, the PDMP should be accessed to aide in recognizing misuse.

While a history of drug abuse was not consistently assessed when conducting a medical history, a urine drug screen was not documented as being performed prior to prescribing an opioid pain medication in any of the medical records reviewed. Consistent documentation of evidence-based guidelines was lacking in the chart review. The results of whether there was an informed consent/patient agreement which gives the patient education on risks, benefits, agreements for use, and reasons why the

prescriptions may be terminated, according to the data analysis, was documented 42.9% of the time. According to evidence-based guidelines, an informed consent should be signed by the patient and provider when prescribing opioid pain medications.

Other the other hand, the majority of the charts reviewed showed documentation of some of the evidence-based guidelines. Patients were referred to another discipline. Referring patients to other disciplines such as physical therapy and pain management is one step that will assist in minimizing the patient's risk for misuse of opioid pain medication. According to national guidelines from the Federation of State Medical Boards, goals for functioning levels should be clearly identified when prescribing opioid pain medications (FSMB, 2004). The study shows that in 71.4% of the medical records were identified to have documentation of goals to improve functioning. Education on safety was identified in 57.1% of the medical records abstracted during this project. When prescribing opioid pain medications, each patient should be educated on the risks of taking opioid pain medications for extended periods of time and given alternative treatments and timeframes of weaning off the medications.

Prescribers should also attempt to lower the dosages of opioid pain medications of patients with complaints of chronic pain. When patients presented to the clinic with complaints of chronic pain, 42.9% of the time they are prescribed an opioid pain medication and the dose was not lowered when prescribing opioids. Although the statistics may seem a little alarming, there were some limitations to the project.

Limitations. Some of the limitations noted for this study include the small sample size and the staff turnover rate. Although 13 providers were educated, only seven providers consented to have their medical records reviewed. During the project the clinic

had resignations from two prescribers. With the decrease in the prescribing staff during the project, there is the potential that fewer patients were seen during the three month time frame for the project. These changes may have played a part in the small sample size. The small sample size is also hypothesized to have contributed to possible procedures for coding the diagnosis. The diagnoses codes for chronic pain 338.2, chronic pain due to trauma 338.21, or other trauma 338.29 were identified for this project. It is unknown if other pain diagnoses codes were used by providers that apply to the particular areas of the body such as back pain or leg pain. Other limitations to the study include the cost of urine drug screening, especially in a community health clinic. Urine drug testing for screening purposes may not be covered by insurance companies and providers may be reluctant to order urine drug screens due to the cost of testing. Prior to beginning the capstone project, discussions were held with the prescribers regarding the proposed goals of the project and the idea of medical records review. This may have alerted the prescribers to the possibility of their records under review and increased compliance with utilizing the evidence-based protocols. The increase in compliance with utilizing evidence-base protocols prior to prescribing an opioid pain medication was a goal for this project overall.

Framework. Using the Plan-Do-Check-Act for continuous quality improvements showed to be beneficial in guiding this study. Deming's theory of using statistical data to show root causes to problems and create a solution helped to guide this project in showing whether the providers were utilizing evidence-based guidelines to minimize the risk of opioid misuse. The theory of constantly and forever improving systems shows us that the improvements needed do not stop at this project. The evaluation plan proves

there is still work to be done. This is an ever evolving quality improvement plan to look at improving patient outcomes and also decreasing healthcare as well as societal costs.

Implications for practice. The implications for future practice are to increase providers' awareness of evidence-based guidelines when prescribing opioid pain medications. The results of this project will be shared with the key stakeholders of the primary care community health clinic where this project was performed with suggestions for implementing evidence-based guidelines for proper prescription opioid pain medication prescribing. Implementation of evidence-based guidelines will be imperative in the fight for minimizing risk of misuse of opioid pain medications. As prescribers are educated and evidence-based guidelines are implemented, the risks of over-prescribing or improper prescribing should show a decrease in misuse of opioid pain medications.

Recommendations for future research. Continuous process improvements in the area of evidence-based protocols to minimize opioid pain medication should be in the forefront of projects considered for future practice changes. Further studies should be completed on whether proper prescribing habits actually decrease the misuse of opioid pain medications. Further evaluations should be performed to assess the barriers to utilizing evidence-based guidelines. The type of funding to assist with the effort to combat opioid pain medication misuse is another area that should be further explored. Insurance companies may not pay for urine drug screening in the clinic setting. Patients may not want to pay to have a urine drug screening performed. Screening could become a burden on the community health care clinic's budget. As the problem of opioid pain medication misuse has steadily increased over the past decades, DNP prepared nurse

practitioners are equipped to research the evidence and implement protocols to minimize risk and change practices.

Conclusions. This doctoral capstone project shows that the providers are documenting components of the history and physical when patients present to a primary care clinic with complaints of chronic pain. Past history of drug abuse and ordering urine drug screens are evidence-based practice recommendations where prescribers have not documented consistently. Accessing the PDMP is another area where it shows the prescribers are not consistently documenting. Implementation of evidence-based guidelines will be imperative in the fight to minimize risk of misuse of opioid pain medications among patients with chronic pain in the primary care setting. Improving prescribing habits to minimize prescription opioid drug misuse will show an improvement in patient outcomes and lessen the societal burden of prescription drug misuse in Mississippi and nationally. The DNP prepared advanced practice nurses will be prepared to evaluate and implement ongoing process improvements to further improve patient outcomes in a system that is associating reimbursement with the quality of care provided, while also working to decrease the financial burden on the current healthcare system.

APPENDIX A

LITERATURE REVIEW TABLE

Authors date	Study type	Sample	Data collection	Key findings
Worley (2012)	Literature Review	Eleven peer reviewed research articles were used.	A critical analysis of the articles	PDMP's are useful and necessary to curb prescription drug abuse and diversion. More research is needed to determine the frequency and barriers to use of PDMP's.
Culberson, Ziska (2008)	Not a research article	Elderly	Literature review	Elderly are at increased risk of abuse of certain medications. The development and validation of screening instruments and treatment guidelines for prescription drug abuse in the elderly are needed.
Dunn, et.al. (2010)	Cohort study	9940 patients who received 3 or more opioid prescriptions within 90 days for chronic non-cancer pain	Pharmacy data and medical records review	Overdose occurs at increased rates in patients prescribed opioids for non-cancer chronic pain.
PDMP Center of Excellence		Review of over 60 resources and data	Survey of 60 references that includes	PDMPs are effective in improving

Authors date	Study type	Sample	Data collection	Key findings
		compiled into a report or briefing	research studies, evaluations, surveys, reports, and data	clinical decision making and improving patient outcomes. PDMP will become more effective as prescribers continue to use evidence-based best practices
Reigler, et.al.	Observational study	Observed calls to a poison control center and admissions to a opioid treatment center	Quarterly surveillance data	Shows the increase of intentional exposures to opioids and the increase of admission to opioid treatment centers to be much less in states where PDMPs had been implemented.
Center for Disease Control and Prevention	Evidence-based guidelines		A review of evidence based guidelines	Common elements of different evidence-based guidelines
Federation of States Medical Boards (2004)	Evidence-based Guidelines			A policy for use of controlled substances when treating chronic pain
SM Fishman (2012)	Evidence-based guidelines			A clinical guideline for responsible opioid prescribing
WM Hooten	A systematic		A literature	Guidelines

Authors date	Study type	Sample	Data collection	Key findings
(2013)	review of literature		search using PubMed and Cochrane databases	were developed to help primary care providers better diagnose and treat pain.
Nuckols. Et.al. (2014)	A critical appraisal of evidence-based guidelines			

APPENDIX B

DNP ESSENTIALS

Essential	DNP Capstone
Scientific underpinning for practice	This project integrated nursing science using analytical and organizational as the highest level of nursing science with the evaluation and implementation of evidence-based guidelines to minimize risk of prescription opioid pain medications. Also evaluated and implemented new practice approaches to prescribing opioid pain medications to improve outcomes of the patients.
Organizational and systems leadership for quality improvement and systems thinking	Implementing this project used advances processes to lead quality improvements and patient safety initiatives in the clinical setting. Employed health policy to develop and implement effective plans for system-wide practice by implementing evidence-based guidelines to minimize the risk of prescription opioid pain medication misuse in a primary care clinic.
Clinical scholarship and analytical methods for evidence-based practice	Analytical methods to critically appraise existing literature and other evidence was used to determine and implement the best practice for prescribing opioid pain medications. Quality improvement methodologies were implemented to promote safe, effective, and patient-centered care for prescribing of opioid pain medications. Practice guidelines from relevant findings were implemented to improve practice.
Information system/technology for the improvement and transformation of health	Demonstrated the conceptual ability and technical skills to develop and execute

care	and evaluation plan involving data extraction from practice information systems and databases. Provided leadership in the evaluation of prescribing habits of providers in the primary care clinic relating to the use of information technology and patient care technology.
Health care policy for advocacy in health care	Critically analyzed health policy related to prescription opioid pain medication misuse. Demonstrated leadership in the implementation of states and federal guidelines for opioid pain medication prescribing. Educated others on regarding health policy and patient care outcomes.
Interprofessional collaboration for improving patient population and population outcomes	Employed effective collaborative skills in the implementation of practice guidelines. Employed leadership skills with interprofessional teams to create change in the health care delivery of patients who present to the primary care clinic with complaints of chronic pain.
Clinical prevention and population health for improving the nation's health	Analyzed epidemiological, biostatistical and other scientific data related to population health of patients who present to the community health primary health clinic with the diagnosis of chronic pain. Synthesized concepts related to population health in implementing and evaluating interventions to address health promotions to minimize risk of prescription opioid pain medication misuse in the primary care setting.
Advanced nursing practice	Conducted a comprehensive and systematic assessment of prescribing habits of the providers in a community health primary care clinic. Demonstrated

advanced levels of clinical judgment, systems thinking and evaluating evidence-based care to improve patient outcomes. Educated prescribers in evidence-based guidelines to minimize risk of prescription opioid pain medication misuse.

APPENDIX C

LOGIC MODEL

Program: Logic Model

Situation: We will evaluate whether prescribers are utilizing evidence-based guidelines which include accessing the Prescription Drug Monitoring Program to minimize the risk of prescription opioid pain medication misuse among patients complaining of chronic pain in a primary care community health clinic.

PICOTS: In patients that present to a primary care clinic with a diagnosis of chronic pain and request prescriptions for opioid pain medications, how does accessing the PDMP and utilizing evidence-based guidelines prior to prescribing treatment compared to not using the PDMP and evidence-based guidelines minimize the risk of opioid misuse?

Inputs	Outputs		Outcomes -- Impact			
	Activities	Participation	Short	Medium	Long	
Prescriber staff	Register all prescribers on the prescription drug monitoring program (PDMP)	Prescribers	Knowledge of evidence-based guidelines	Increase usage of the PDMP	Behavior changes in provider prescribing habits	
Support staff		Nursing staff				
Research base		Key stakeholders				
Technology	Conduct discussions with prescribers regarding evidence-based guidelines	Trained data abstractor	Obtain thorough history and physicals	Obtaining informed consent	Improved patient outcomes	
Time		Project director	Knowledge of the PDMP	Obtaining urine drug screens		
Educational materials	Evaluate barriers		Knowledge of alternative measures for pain control	Lowering opioid doses	Improved quality of life for patients	
				Referrals to other disciplines		Adequate pain control for patients
				Document goals		Control healthcare costs
	Review records to evaluate provider prescribing habits			Educate patients on safety		

Assumptions --- Increased use of evidence-based guidelines the PDMP will minimized the risk of misuse of prescription opioid pain medications in patients with the diagnosis of chronic pain in the primary care setting. .

External Factors --- PDMP, patients, family members, outside prescribers

APPENDIX D

IRB APPROVAL LETTER



THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD

118 College Drive #5147 | Hattiesburg, MS 39406-0001

Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15012801

PROJECT TITLE: Evidence-Based Strategies to Minimize Risk of Opioid Pain Medication Misuse Among Patients with Chronic Pain in a Primary Care Setting

PROJECT TYPE: New Project

RESEARCHER(S): Carolyn Coleman

COLLEGE/DIVISION: College of Nursing

DEPARTMENT: Systems Leadership and Health Outcomes

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Expedited Review Approval

PERIOD OF APPROVAL: 01/28/2015 to 01/27/2016

Lawrence A. Hosman, Ph.D.

Institutional Review Board

APPENDIX E
LETTER OF SUPPORT

CENTRAL MISSISSIPPI HEALTH SERVICES, INC.

1134 Winter Street
Jackson, MS 39204

Ph. 601-948-5572

Fax 601-353-7070

October 22, 2014

To: The University of Southern MS School of Nursing

From: Central MS Health Services

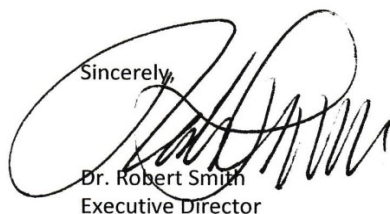
Re: Carolyn Coleman FNP-BC Capstone Project

We have discussed Ms. Coleman's proposed capstone project related to prescription drug abuse, and understand that she will use data from our current patient population to gain knowledge on current practices and possibly suggest changes to the provider staff here at Central MS Health Services.

We understand that the University of Southern Mississippi's Institutional Review Board is concerned for the privacy of the participants of this project. The proposed project will consist of a review of our medical records and no identifying information will be used. Furthermore, it is our understanding that this project will be under the supervision of a clinical capstone chairperson from the university who will be in constant contact with the student.

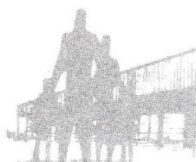
The clinic fully supports Ms. Coleman's proposed project. We will support her in obtaining the information needed to complete this project, and we do not have any concerns of breaches in patient safety or privacy.

Sincerely,



Dr. Robert Smith
Executive Director

Southwest Clinic
5429 Robinson Rd., Ext.
Jackson, MS 39204
Ph. 601-914-0163
Fax 601-914-0170



Tougaloo Health & Wellness Clinic
500 W. County Line Rd.
Tougaloo, MS 39174
Ph. 601-957-6776
Fax 601-957-8840

APPENDIX F
DATA COLLECTION TOOL

Identification Number _____

	Yes	No
History and Physical		
Nature of pain		
Intensity of pain		
Past pain treatments		
Co-existing conditions		
Effect of pain on physical functioning		
Past history of substance abuse		
PDMP accessed		
Informed Consent/Patient Agreement		
Urine Drug Screen		
Was an opioid prescribed?		
Was opioid dose lower?		
Was patient referred to other discipline?		
Were goals clearly identified?		
Was education documented on safety?		
PROVIDER		
MD contract		
MD full-time		
PA contract		
PA full-time		
NP contract		
NP full-time		

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