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Educating Nurse Practitioners on the CDC Guidelines for Prescribing Opioids for Chronic Pain in the Practice Setting

Amber Whitehill

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Educating Nurse Practitioners on the CDC Guidelines for Prescribing Opioids for Chronic Pain
in the Practice Setting

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Abstract

Background: Prescription opioids have become a problem in the current opioid crisis, being inappropriately used by those who do not require them. The purpose of this DNP project was to increase the awareness, knowledge, and comfort level of nurse practitioners in relation to the CDC Guidelines for Prescribing Opioids for Chronic Pain.

Methods: An educational program was used to inform Nurse Practitioners who were members of the Massachusetts Coalition of Nurse Practitioners of the CDC Guidelines for Prescribing Opioids for Chronic Pain. A prescribing survey was initially given to determine their awareness, knowledge, and comfort level using the CDC Guidelines for Prescribing Opioids for Chronic Pain. They then reviewed a synopsis of the CDC Guidelines and completed a survey regarding what they learned and how they might change practice according to the guidelines.

Results: Of the twelve nurse practitioners responding from practice settings, 45% of participants learned something new from the guidelines, and 36% said they would change the way that they practice based on the review of the guidelines. It was also evident that most (75%) were aware of the need to establish treatment goals with their patients in regards to opioid use.

Conclusion: The Nurse Practitioners surveyed were generally aware of the guidelines needed to safely prescribe opioids to avoid problem use, but did gain extra knowledge from reviewing the CDC Guidelines for Prescribing Opioids for Chronic Pain. They were able to adequately express their own knowledge of the guidelines, whether or not they follow certain recommendations, and what affected the opioid use in their area.

Keywords: Opioid abuse, prescription opioids, CDC Guidelines for Prescribing Opioids for Chronic Pain, Massachusetts Coalition of Nurse Practitioners, substance abuse

Introduction to Problem

The number of prescription opioids for pain management has risen drastically. From 1997 to 2007, there has been a 400% increase in the amount of prescription opioids (Cochran, Bacci, Ylloja, Hruschak, Miller, Seybert, & Tarter, 2016). This has led to prescription opioids being the leading drug of abuse, rising above that of heroin and cocaine (Clark, Hurley, & Adams, 2018). The United States is the largest consumer of prescription opioids, with Canada coming in second (Muir & Seymour, 2017). Extending beyond North America, there have been reported increases in prescription opioid use in other countries, such as Australia and New Zealand (Ling, Mooney, & Hillhouse, 2011). Inappropriate over prescribing of opioids can lead to both addiction and diversion of these medications. The inappropriate use and abuse of opioid medications can lead to health risks, including increased risk for motor vehicle accidents, heart attacks, bone fractures, and even death (Clark et al., 2018). Other adverse events associated with opioid use are respiratory depression, medication interactions, disease transmission, and engagement in risky behaviors, including unprotected sexual intercourse, ingestion of alcohol, and using other drugs at the same time as opioids (Ling et al., 2011).

There are predicted to be 500,000 opioid-related deaths in the United States within the next ten years (Clark et al., 2018). More residents in the community setting have lost their lives to drug overdoses compared to motor vehicle accidents, suicide, certain cancers, firearms, influenza, and HIV (Clark et al., 2018). Opioid overdoses that resulted in death increased by 300% from 2001 to 2013 in the United States. Even though not all of these overdoses are from prescription opioids, half of patients who entered treatment for opioid addiction reported that they were first exposed to opioids through a physician's prescription (Madras, 2017).

There has been increasing pressure on providers to treat pain with opioids, since pain is now designated as the fifth vital sign (Madras, 2017). Even though opioids are the most potent

form of pain control, these physicians are put under an extreme pressure by patients to minimize suffering and improve functioning by taking control of pain (Ling et al., 2011). Opioids for pain relief should be saved for severe, acute pain caused by severe injuries, medical conditions, or surgical procedures, or chronic pain (Women's Healthcare, 2017). These types of medications should also be used when non-opioid alternatives are ineffective or they are contraindicated for certain reasons (Women's Healthcare, 2017).

By utilizing the CDC Guidelines for Prescribing Opioids for Chronic Pain, physicians can potentially decrease the number of prescribed opioids, therefore leading to less negative consequences. These guidelines are comprised of twelve recommendations that are divided into three separate categories: determining when to initiate or continue opioids for chronic pain, opioid selection, dosage, duration, follow-up, and discontinuation, and assessing risk and addressing harms of opioid use (Centers for Disease Control and Prevention, 2016).

This quality improvement project was an educational intervention focused on evaluating the knowledge, awareness, and comfort level of using the CDC Guidelines for Prescribing Opioids for Chronic Pain, as well as obtaining the nurse practitioner's views of prescribing opioids. The opioid crisis has been an ongoing challenge for the United States and other areas of the world. In some cases, the method by which people become addicted to opioids is from over-prescribing by providers. This project was composed of a prescribing survey, a brief fact sheet on the CDC Guidelines for Prescribing Opioids for Chronic Pain, and a post-education survey to gather information on provider's views and use of the guidelines.

Background

The United States is the largest consumer of prescription opioids, with Canada coming in second (Muir & Seymour, 2017). There have also been reported increases in prescription opioid

use in other countries, such as Australia and New Zealand (Ling, Mooney, & Hillhouse, 2011). Inappropriate over prescribing of opioids can lead to both addiction and diversion of these medications. The inappropriate use and abuse of opioid medications can lead to health risks, including increased risk for motor vehicle accidents, heart attacks, bone fractures, and even death (Clark et al., 2018). Other adverse events associated with opioid use are respiratory depression, medication interactions, disease transmission, and engagement in risky behaviors, including unprotected sexual intercourse, ingestion of alcohol, and using other drugs at the same time as opioids (Ling et al., 2011).

There are predicted to be 500,000 opioid-related deaths in the United States within the next ten years (Clark et al., 2018). More residents in the community setting have lost their lives to drug overdoses compared to motor vehicle accidents, suicide, certain cancers, firearms, influenza, or HIV (Clark et al., 2018). Opioid overdoses that resulted in death increased by 300% from 2001 to 2013 in the United States. Even though not all of these overdoses are from prescription opioids, half of patients who entered treatment for opioid addiction reported that they were first exposed to opioids through a physician's prescription (Madras, 2017).

Physician's and other prescribers need to be adequately informed about the risk of opioid abuse when prescribing. Medical training should include the awareness of opioid overdose risk, using opioids in combination with alcohol and/or benzodiazepines, immediate-release opioid formulas, and history of overdose from opioids (Madras, 2017). Dependence on opioids can even occur at correctly prescribed doses in those with no abuse history, which is also something that needs to be taken in to account (Ling et al., 2011). By utilizing the CDC Guidelines for Prescribing Opioids for Chronic Pain, physicians can potentially decrease the number of prescribed opioids, therefore leading to less negative consequences.

Review of the Literature

An extensive search of the literature for opioid abuse tools was completed through the PubMed and CINAHL databases from the University of Massachusetts Amherst online library. Oral substance abuse has been defined by the National Institutes of Health (2018) MeSH terms as “*abuse, overuse, or misuse of a substance by ingestion.*” The terms that were used to search both online databases were *opioid, risk, tool, abuse, misuse, prevention*, and “*CDC guidelines for prescribing opioids.*” On PubMed, all searches were narrowed down to the last five years and only clinical trials were accessed. The search of “*opioid risk tool*” yielded eight results, “*opioid abuse risk*” yielded 99 results, “*opioid abuse tool*” yielded five results, “*opioid misuse prevention*” yielded 16 results, and “*CDC guidelines for prescribing opioids for chronic pain*” yielded five results.

These searches yielded many of the same articles, showing the overlap in the search terms. The specific search of “*CDC guidelines for prescribing opioids for chronic pain*” yielded 26 results. When using CINAHL, all results were from the last ten years with the term “*opioid risk tool*” and yielded 43 results as well as “*opioid abuse tool*”, and “*opioid misuse prevention*” yielded 12 results. The search of “*CDC guidelines for prescribing opioids for chronic pain*” yielded a total of 28 results. The search term “*opioid prescribing in primary care*” yielded 18 results. The Cochrane Library was also accessed for the search of “*CDC guidelines for prescribing opioids for chronic pain*”, but all five of the results were locked and could not be accessed by the student or the librarian.

The inclusion criteria were as follows: All articles were in the English language, available as full text, and were published within the last ten years. A total of 38 articles were read in full, but 19 of them were excluded due to not meeting criteria. Two of these were excluded due to

small sample size, four were excluded due to being irrelevant to the main subject being researched, two were excluded due to repeat publication, and eleven articles were omitted for only being periodicals with no study completed.

A total of twelve studies were selected to review for this project. One was a cohort study, three were cross-sectional studies, five were retrospective cohort studies, two were case-control studies, and one was a quality improvement project. Out of the twelve total studies, three of them examined the use of the Opioid Risk Tool. The remaining nine studies examined the Current Opioid Misuse Measure (3), the Screener and Opioid Assessment for Patients with Pain-Revised and Short Form (4) and the CDC Guidelines for Prescribing Opioid for Chronic Pain (2). The information that was discovered when searching about the CDC guideline was general information about the new guideline.

Guidelines and Tools to Endorse Safer Opioid Prescribing

Opioid Risk Tool. The Opioid Risk Tool (ORT) is a screening tool that was developed in 2001 but first implemented in 2005 (Clark et al., 2018). This tool helps categorize patients with a low, medium, or high risk of opioid abuse (Clark et al., 2018). The ORT was analyzed and validated in a cross-sectional study with data collected from 225 patients aged 18 years and older at a pain center for a period of one year (Clark et al., 2018). The data analysis showed that 81.5% of females had a low risk, 13% had medium risk, and 5.5% had high risk. For males, 76.8% had a low risk, 12.6% had a medium risk, and 10.4% had a high risk (Clark et al., 2018). Another study analyzed the ORT with patients with chronic medical and serious mental illnesses (O'Mahony, Bines, Gerhart, Bagwell, Marlene, and Card, 2017). In this study, 74 patients from a senior care palliative care clinic were followed for one year (O'Mahony et al., 2017). Half of the

patients were high risk for opioid abuse, and the mean ORT score was 7.8 (O'Mahony et al., 2017).

A third study was also examined, and consisted of 114 patients that attended a palliative care clinic (Barclay, Owens, & Blackhall, 2014). According to the scores of the ORTs, 21% of patients were high risk, 22% as medium risk, and 57% as low risk for opioid misuse (Barclay et al., 2014).

Screener and Opioid Assessment for Patients with Pain-Revised and Short form.

The Screener and Opioid Assessment for Patients with Pain-Revised (SOAPP-R) is a screening tool that is used prior to the initiation of chronic opioid therapy (Muir & Seymour, 2017). The SOAPP-R is a 24-item questionnaire that is self-administered to patients with chronic pain, and the items are then added up for a score (Muir & Seymour, 2017). If the score reaches above 18, the patient is at a high risk for opioid abuse (Muir & Seymour, 2017). In one study, the SOAPP-R identified 81% of individuals were at high risk for abuse but also identified that 68% of these were not high risk (Muir & Seymour, 2017). In another study that used SOAPP-R, 209 cancer patients from the emergency department were screened for opioid misuse (Reyes-Gibby, Anderson, & Todd, 2016). The end results showed that 71 out of the 209 participants screened high risk for opioid misuse (Reyes-Gibby et al., 2016). The SOAPP-R was also used on a sample of ED patients to see if they met the criteria for high risk abuse potential (Weiner, Horton, Green, & Butler, 2016). Out of the 82 participants of the study, 53.9% were considered to be at high risk for opioid abuse (Weiner et al., 2016).

Another form of the SOAPP assessment is a short form that consists of 14 questions related to risk of aberrant behaviors with opioid use (Koyyalagunta, Bruera, Aigner, Nusrat, Driver, & Novy, 2013). For this form, a score of 4 or greater is considered high risk for opioid

misuse (Koyyalagunta et al., 2013). The study included 522 participants from a pain center, 149 of which scored high for opioid abuse risk and 373 scored low for opioid abuse risk (Koyyalagunta et al., 2013).

Current Opioid Misuse Measure. The Current Opioid Misuse Measure (COMM) is a 17-item survey that contains questions with a 5-point Likert scale to identify the current severity of opioid misuse behavior (Brown, Deyo, Riley, Quanbeck, Glass, Turpin, Hetzel, Nicholas, Cruz, & Agarwal, 2017). Baseline scores are gathered at the inpatient stay or within one week of discharge, and follow-up scores are collected at follow-up visits on weeks 4, 12, and 24 post discharge (Brown et al., 2017). Current guidelines have shown that using the COMM in the primary care setting is useful for those patients prescribed opioid therapy (Meltzer, Rybin, Saitz, Samet, Schwartz, Butler, & Liebschutz, 2011). One study was done to see if those patients with a current prescription drug disorder (PDD) had higher COMM scores than those without a disorder (Meltzer et al., 2011). This study did show that the scores for those with a PDD did have significantly higher scores than those with no PDD (Meltzer et al., 2011). Another study that included 93 participants from primary care offices showed that 28 participants had scores over 13 (high risk) and 65 participants had scores under 13 (low risk) (Just, Bingener, Bleckwenn, Schnakenberg, & Weckbecker, 2018).

There was also a study done using COMM at an outpatient specialty clinic consisting of 377 participants who were treated for pancreatitis pain (Barth, Balliet, Pelic, Madan, Malcolm, Adams, Morgan, Owczarski, & Borckardt, 2014). Of all of the participants, 46% scored high enough to be put in the category of high risk for opioid misuse (Barth et al., 2014).

CDC Guideline for Prescribing Opioids for Chronic Pain. The CDC published this guideline in March of 2016 to aid primary care providers who prescribe opioids for chronic pain

(Dowell, Haegerich, and Chou, 2016). The guideline applies to those patients who are 18 years and older who are experiencing chronic pain that is not related to active cancer (Dowell et al., 2016). In order to create the guideline, the CDC obtained information from many areas, including experts, the public, and peer reviewers (Dowell et al., 2016). The recommendations that make up the guideline include communicating risks and benefits of opioid use, improving safety and effectiveness of pain treatment, and reducing the risks that come with opioid abuse (Dowell et al., 2016). If these guidelines are followed, there should be a reduction in the number of prescription opioids prescribed by primary care providers, as well as the negative risks that go along with taking opioids (Busse, Juurlink, and Guyatt, 2016).

There was one study that was found that examined electronic health record data from 31,422 providers using the Athenahealth database (Garcia, Heilig, Lee, Faul, Guy, Iademarco, Hempstead, Raymond, and Gray, 2019). The providers together served about 17 million patients, and the data was collected from January 5, 2014 to March 11, 2017 over three time periods (Garcia et al., 2019). After the CDC Guideline came out in March 2016, opioid prescribing decreased from 7.4% during period one to 6.4% during period three (Garcia et al., 2019). This demonstrated that the release of the CDC Guideline for Prescribing Opioids for Chronic Pain did have an impact on the number of opioids prescribed by primary care clinicians.

Controlling Pain in Primary Care. Primary care providers make up about half of the prescribers for opioid prescriptions, leading them to be a large focus for the improvement of prescribing practices (Zgierska, Vidaver. Smith, Ales, Nisbet, Boss, Tuan, and Hahn, 2018). The quality improvement implemented a policy to manage long-term opioid therapy in adults at family care practices and general internal medicine clinics consisted of online educational modules, practice facilitation, and patient education materials (Zgierska et al., 2018). The goal of

this quality improvement project was to evaluate if a quality improvement intervention improved the rates of implementation of a policy on opioid prescribing in primary care, and the rates increased by 20% (Zgierska et al., 2018).

Summary

The tools around opioid prescribing that are used in primary care practices today can be very helpful in identifying those who need help and treating them. The Opioid Risk Tool, Screener and Opioid Assessment for Patients with Pain-Revised and Short Form, the Current Opioid Misuse Measure, and the CDC Guidelines for Prescribing Opioids for Chronic Pain all have their own unique way of going about screening for opioid abuse risk.

It is well known that utilizing these tools can make an impact on the number of opioids that are prescribed and implementing these tools and guidelines into practices can have a positive impact on prescribing practices. The focus of this DNP project was to utilize the CDC Guidelines for Prescribing Opioids for Chronic Pain, specifically by NPs in different practice settings.

The fact that opioid prescribing dropped from 7.4% to 6.4% during the trial with the Athenahealth database is evidence that this guideline does work when it is put into place and utilized. By utilizing the CDC guideline, it is anticipated that more primary care practices will apply it, further decreasing the number of opioids prescribed for chronic pain.

The literature review also yielded several results in relation to screening for opioid abuse. The main risk tools that were found were the Opioid Risk Tool, the Screener and Opioid Assessment for Patients with Pain-Revised and Short Form, and the Current Opioid Misuse Measure. The CDC Guideline for Prescribing Opioids for Chronic Pain was also an important finding, since it gives prescribers a lot of recommendations for safe opioid prescribing when

appropriate. The tools were all implemented in different settings, including primary care offices, emergency departments, and pain centers.

The Opioid Risk Tool and the Screener, Opioid Assessment for Patients with Pain-Revised and Short Form, and The CDC Guideline for Prescribing Opioids for Chronic Pain are ones that can be utilized prior to prescribing opioids. They are tools that are helpful in seeing whether or not someone is at a high risk to abuse opioids or not. The Current Opioid Misuse Measure is the tool that can be used during treatment to assess whether or not people are currently abusing the opioids that they are prescribed. The CDC Guideline can also be used during treatment as a resource for when prescribers should be checking in on their patients and what should be done during visits.

Theoretical Framework

The theoretical framework used for this DNP project was The Diffusion of Innovations Theory by Everett Rogers (Appendix A). This theory is used for implementing valuable change and guiding innovation (Kaminski, 2011). Over time, ideas and practices shift from being new innovations to what is common in practice (Terhaar, Taylor, and Sylvia, 2016). Rogers' theory is made up of a five-stage adoption process that occurs as people adopt the new idea or practice (Kaminski, 2011). This theory was chosen due to its simplicity and ability to conform to an educational intervention.

Stage One: Knowledge and Awareness

Stage one is the knowledge and awareness stage, which addresses why the change is needed, how the change will occur, and who will be involved (Handricks-Jackson & Hawkes, 2017). The stage was addressed by informing the participants about the rising opioid prescriptions in the United States as well as how it is specifically related to primary care

practices. The use of an educational intervention was included and providers who treat patients with chronic pain were asked to be involved. A prescribing survey composed by the student was used to evaluate the extent to which guidelines were currently being used.

Stage Two: Persuasion and Interest

Stage two of Rogers' theory is the persuasion and interest stage, which is where the audience is persuaded to accept the change (Handricks-Jackson & Hawkes, 2017). In order to complete this stage, persuasion was met by completing an educational intervention about the CDC Guidelines for Prescribing Opioids for Chronic Pain. Participants were provided with the CDC Guidelines for Prescribing Opioids for Chronic Pain Fact Sheet, which is a simplified version of the entire guideline. By explaining how the CDC Guideline works, and the components that go along with it, Nurse Practitioners were able to plan to implement the change in their practice.

Stage Three: Decision/Evaluation

This stage involved the participants deciding whether or not to participate in the change (Handricks-Jackson & Hawkes, 2017). As the participants reviewed the guideline and gained knowledge, they become more aware of guidelines for prescribing opioids, as well as perhaps their own personal feelings of prescribing opioids to patients.

Stage Four: Implementation/Trial

The fourth stage involves actually implementing the change (Handricks-Jackson & Hawkes, 2017). This stage involved using the CDC Guideline for Prescribing Opioids for Chronic Pain in current nurse practitioner practice. The nurse practitioners that participated in this study had the opportunity to think about their current use of the CDC guideline and other guidelines that they use when prescribing opioids.

Stage Five: Confirmation/Adoption

The fifth and final stage of Rogers' Diffusion of Innovation Theory is the confirmation and adoption stage. During this stage, those who participated should have adopted using the CDC Guideline for Prescribing Opioids for Chronic Pain. Nurse Practitioners were then asked if they would change their practice after reviewing the guidelines, giving insight as to if they would adopt the recommendations.

Methods

The goal of this DNP project was to increase the awareness, knowledge, and comfort level of nurse practitioners regarding the use of the CDC Guideline for Prescribing Opioids for Chronic Pain. After reviewing the Guidelines Fact Sheet from the CDC provided by the student, the goal was to have at least 50% of participants have an increase in their awareness, knowledge, and comfort level concerning prescribing opioids and using the guidelines. A goal of recruiting 10-20 nurse practitioners from the Massachusetts Coalition of Nurse Practitioners was met.

This project was completed using members of the Massachusetts Coalition of Nurse Practitioners. The Massachusetts Coalition of Nurse Practitioners (MCNP) is a group that was created for Nurse Practitioners with a mission to "advance NP practice by means of leadership, education, Advocacy, and the Delivery of exceptional care" (MCNP, 2020). The MCNP has a vision of "Health equity, Cost savings, and Optimal Wellness for Residents of MA" (MCNP, 2020). The Massachusetts Coalition of Nurse Practitioners approved the project and aided the student in sending out the emails to the members once UMass IRB approval was obtained (Appendix B).

This DNP project included a prescribing survey and a post-education survey, which were administered to participants once online consent was obtained. The prescribing survey had a total

of twelve questions, which includes yes/no and open-ended questions, and can be found in Appendix C. The post-education survey has five questions, all of which are open-ended to receive the greatest feedback from the participants, and can be found in Appendix D.

The prescribing survey was taken first to get the baseline of each provider's awareness, knowledge, and comfort level of different aspects of the guideline. Once the prescribing survey was completed, the fact sheet provided by the DNP student (Appendix E) was reviewed. Next the participants completed the post-education survey to further assess their knowledge, feelings, use, and views of opioid prescribing. The surveys were taken through Survey Monkey and did not require any registration or identifying information by the participant.

Human Subjects Protection

The Institutional Review Board is a federally mandated committee that is in charge of reviewing all research involving human subjects (University of Massachusetts Amherst, 2020). The University of Massachusetts is responsible for protecting the rights and the welfare of human subjects of research that is conducted by students (University of Massachusetts Amherst, 2020). Since this project was using human subjects for research, the university needed to be in line with the federal policy on the protection of human subjects, 45 CFR 46 (University of Massachusetts Amherst, 2020). This policy ensures that any risks that could accompany the research do not outweigh the potential benefits of the research (University of Massachusetts Amherst, 2020). The University of Massachusetts Amherst IRB approved this DNP project, and informed consent was gathered from participants before they began the project.

Data Analysis

Surveys were done through Survey Monkey and emailed along with the Guideline Fact Sheet of the CDC Guidelines for Prescribing Opioids for Chronic Pain. Due to the low number

of participants, this data is represented with descriptive statistics. Qualitative data in the form of statements were collected in open-ended questions and analyzed for themes to assess the thoughts and practices of nurse practitioners who themselves prescribe opioids. These statements yielded insight on the opinions and thoughts regarding opioid prescribing by nurse practitioners. The prescribing survey and the post-education survey were different instruments, therefore the data collected in the surveys could not be directly compared.

Results

The call for participation of nurse practitioners in this DNP project yielded twelve nurse practitioners that were members of the Massachusetts Coalition of Nurse Practitioners. There was a total of 14 NPs who consented to participating in the project, but only 12 completed the entire program. Not all questions were answered by each participant since in the request for participation they were informed that they could skip questions that they did not feel comfortable answering.

Each of these participants consented to the project via the online consent form, completed the prescribing survey, reviewed the Guidelines Fact Sheet, and completed the post-education survey. The project began on December 14, 2019 when the emails to the Massachusetts Coalition of Nurse Practitioners members was sent out asking to participate in the project. The project was concluded on January 14, 2020, one month from the start of the project date.

Prescribing Survey

The first question of the prescribing survey asked the nurse practitioner which area of practice that they were currently in. Figure 1 shows the results of how many of each type of NP took part in the project.

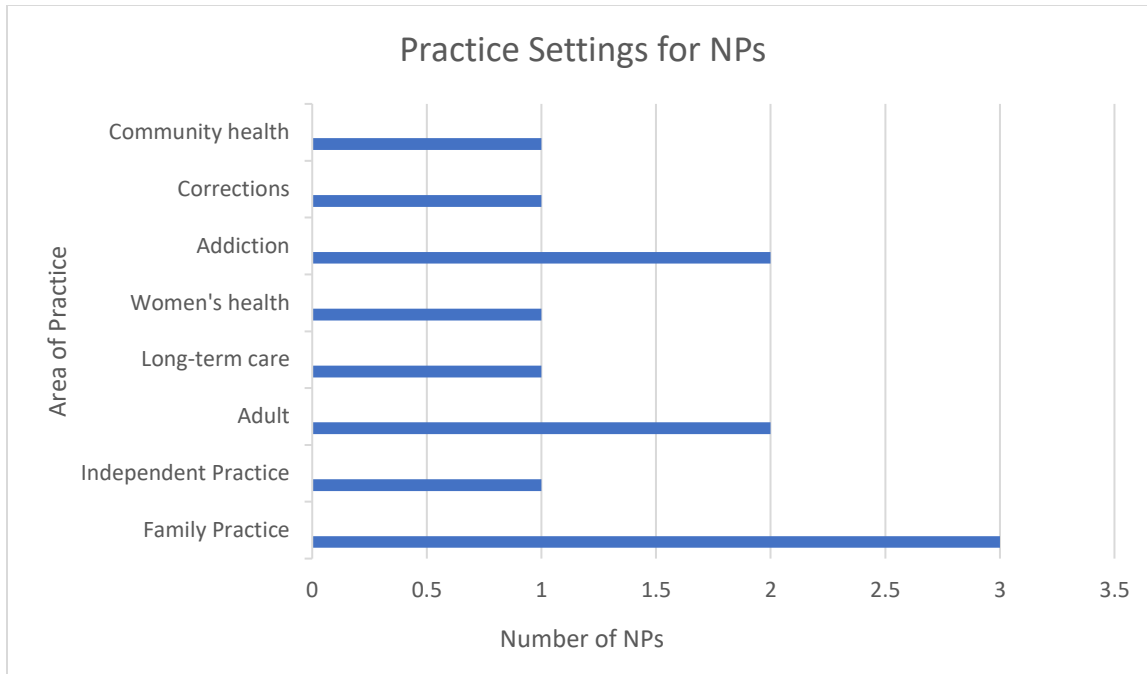


Figure 1. Practice Settings for NPs who participated in the project.

Out of the 12 nurse practitioners that completed the project, three work in family practice, one in an independent office, two in adult primary care, one in internal medicine in long-term care facilities, one in women’s health, two in addiction medicine, one in corrections, and one in community health. The breakdown of practice settings is seen in Figure 1.

Table 1

Prescribing Survey of Nurse Practitioners based on CDC Opioid Guidelines

Question #	Frequency	Percentage
2.) Frequency of prescribing opioids to patients		
Daily	1	8.33%
Weekly	3	25.00%
Monthly	8	66.67%
3.) Non-pharm. therapy and non-opioid pharm. therapy are preferred for pain		
Yes	10	90.91%
No	1	9.09%

The prescribing survey questions were based off the 12 recommendations that are included in the CDC Guidelines for Prescribing Opioids for Chronic Pain. All of the questions that were answered by participants can be reviewed in full in Appendix C. For the first three questions, the data was pretty clear. The CDC Guidelines for Prescribing Opioids for Chronic Pain include the information that non-pharmacological and non-opioid pharmacologic therapy are preferred for treating pain (CDC, 2016). As expected, most providers (91%) agree with this statement. When asked how often the providers are prescribing opioids in the practice setting, the majority (67%) answered monthly, followed by 25% prescribing weekly. The least number of providers (8%) said that they prescribe opioids daily.

Table 2 shows partial results of the prescribing survey results. This is where the question, as well as the number of people who answered each choice is seen, along with the percentage out of the whole. Some numbers of participants under the “frequency” column do not add up to 12 since participants were allowed to skip questions if they did not feel comfortable answering them.

Table 2

Prescribing Survey of Nurse Practitioners based on CDC Opioid Guidelines (2)

Question #	Frequency	Percentage
4.) Establishing treatment goals		
Yes	9	75.00%
No	0	0.00%
Sometimes	3	25.00%
5.) Explained risk and benefits of therapy		
Yes	12	100.00%
No	0	0.00%
6.) Prescribing IR opioids vs. ER opioids		
Yes	7	63.64%
No	4	36.36%

7.) Prescribe short durations for acute pain		
Yes	11	91.67%
No	1	8.33%

When asked if the NPs established treatment goals with their patients before starting opioid therapy, 75% said they did, while 25% said that they only established goals sometimes. All providers declared that they explained the risks and benefits of opioid therapy. Another aspect of the CDC Guidelines for Prescribing Opioids for Chronic Pain is the fact that immediate-release (IR) opioids should be used first for treating pain, as opposed to extended-release opioids (CDC, 2016). Question six focused on this portion of the guidelines and revealed that 64% of participants prescribed IR opioids first, but that 36% did not. In addition, 92% of NPs surveyed said that they prescribe no greater quantity of opioids than what is absolutely necessary, and 8% did not.

Table 3 presents a continuation of the prescribing survey results focused on evaluating benefits and harms, administering drug tests, avoiding prescribing benzodiazepines with opioids, and using evidence-based treatment guidelines for patients with the opioid use disorder.

Table 3

Prescribing Survey of Nurse Practitioners based on CDC Guidelines (3)

Question #	Frequency	Percentage
8.) Evaluate benefits and harms every 3 months		
Yes	11	91.67%
No	1	8.33%
9.) Administering drug tests		
Yes	7	58.33%
No	5	41.67%
10.) Avoid opioids and benzos concurrently		
Yes	12	100.00%
No	0	0.00%

11.) Offering or arranging evidence-based treatment for patients with opioid-use disorder		
Yes	7	58.33%
No	5	41.67%
12.) Feeling manipulated/pressured by patients		
Yes	5	41.67%
No	7	58.33%

According to the CDC Guidelines, providers should be evaluating the benefits and harms of continued therapy every three months or more frequently (CDC, 2016), and almost all NPs (92%) said that they do follow this portion of the recommendation. As for administering urine drug tests before starting opioid therapy, surprisingly only 58% of NPs said that they did administer drug tests, and 42% said they did not administer the tests. None of the participants chose to comment on why they do or do not use urine drug tests before initiating opioid therapy. All agreed, when possible, it is best to avoid prescribing benzodiazepines and opioids at the same time.

The answers were almost split when asked if the providers offer or arrange to set up treatment for those with opioid-use disorder. Only 58% of NPs said that they do offer or arrange for this treatment, while 42% currently do not. The question related to providers feelings of being manipulated and/or pressured by patients to prescribe opioids revealed 42% said that they do feel pressured to prescribe opioids at times.

Post-Education Survey

The post-education survey was designed to measure whether or not the participants had learned something from the project, if they will change their practice at all after reviewing the

guidelines, whether or not they will offer medication-assisted treatment in the future, what they think about opioid abuse in their area, and what can be done to further address this issue.

Table 4 represents all of the questions from the post-education survey that could be measured with percentages based on the frequency of people who chose each answer. The questions can be viewed in full in Appendix D.

Table 4

Post-Education Survey Results After Reviewing CDC Guidelines

Question #	Frequency	Percentage
1.) Learned something new from the guidelines		
Yes	5	45.45%
No	6	54.55%
2.) Will change practice based on guidelines		
Yes	4	36.36%
No	2	18.18%
Explanations	5	45.45%
3.) Offering medication-assisted treatment now or in the future		
Yes	4	36.36%
No	2	18.18%
I already off MAT	5	45.45%

Out of the NPs surveyed, 45% said that they did learn something new after reviewing the guidelines. Question two revealed that 36% would change their practice based on these guidelines, while 18% will not. Question two also had an option for the participant to explain how they would change their practice, or why they will not, and five people chose to comment on this. Two people responded that they already follow these guidelines.

One person said that they would add screening to their practice when prescribing opioids. Another person stated how they already limit their prescribing and how their place of

employment provides a lot of information and support about this topic. One wrote that they already limit their prescriptions for opioids, typically for post-op patients and the prescription is for five days or less.

The third question on the post-education survey was focused on whether or not the NPs currently offer medication-assisted treatment to help their patients potentially wean off of opioids, or if they will think about offering it in the future. Almost half (45%) of those who answered this question already offer medication-assisted treatment, while 36% said that they would consider it in the future. Unfortunately, two providers (18%) said that they would not consider offering the medication-assisted treatment in the future.

Question four was open-ended and solicited the NPs view of opioid abuse in their area, and nine participants chose to respond. Two stated that opioid abuse is a significant problem, as well as two stating that the prevalence of opioid abuse in their area is high. One stated that it is a very serious problem, and that they refuse to contribute to the abuse rate by only prescribing when absolutely necessary. Two NPs mentioned how opioid abuse is a national problem, and not just in their area. Another stated how the issue is very problematic and needs more attention, and one stated that they believe that there is more opioid abuse from medications and drugs obtained from the streets, not so much medications prescribed by providers.

The last question on the post-education survey was also open-ended, and was answered by seven participants. The question asked what else is needed for providers to adequately address the opioid epidemic in their area. One NP stated that this topic should continue to be discussed at national and regional conferences so that providers are able to learn as much as they can about opioid abuse. Two mentioned that there should be more access to substance abuse treatment centers and behavioral health care. Another said that *“the ER needs to stop prescribing copious*

amounts of opioids.” Another person wrote that there should be increased waiver certification for Suboxone prescriptions. Finally, one participant mentioned that the public needs more education on the risks of opiate use and opioid use disorder treatment programs.

Discussion

As anticipated, the nurse practitioners participating in this project were mostly familiar with what is needed in order to address the opioid issue in their area. This was seen through the answers from question five on the post-education survey, which included the stopping of opioid prescribing through emergency departments, educating the public about the opioid crisis, providing more Suboxone prescribing, and gaining more access to behavioral health treatment programs along with substance abuse treatment centers.

Another one of the expected outcomes of this project was that 50% of participants would be motivated to change their practice, however, only 36% said that they will change their practice. Even though the exact percentages did not meet the goal, it is a positive trend that people are already following the guidelines.

When reviewing the overall awareness of the CDC Guidelines, the prescribing survey determined that most participants do in fact already follow the guidelines. Even though some NPs answered that they do not follow the guidelines, it is not seen as a negative. This is because they were already exposed to the guidelines. This was more understood by seeing that nine of the questions on the prescribing survey were based on whether or not participants follow the recommendations in the guidelines.

As demonstrated in the review of the literature, at least half of the participants in different studies were considered at high risk for opioid abuse, despite the setting of the study. When reviewing the results, the frequency of those following the CDC Guidelines for Prescribing

Opioids for Chronic Pain was higher than those who do not. This allows us to see that providers are indeed making changes to their practice, if they have not done so already, to help combat opioid abuse issues.

In the study involving the Athenahealth network, it was noted that there was a 1% decrease in the number of opioids that were prescribed during a trial period after the CDC Guidelines were released in March 2016. The participants in the DNP project revealed that 36% will also change their practice after reviewing the guidelines, adding to the decrease in the number of opioids being prescribed. Changes to the practices will also include urine drug screening before prescribing opioids.

The only two questions that 100% of participants stated that they follow regarding the current CDC Guidelines were question numbers five and ten on the prescribing survey. Question five was in regards to discussing the known risks and benefits of opioid therapy. This portion of the guideline is important so that the patient is aware of what could be positive, and negative, when it comes to taking opioid pain medications. Question ten focused on avoiding prescribing opioid pain medications while prescribing benzodiazepines for the same patient. It is dangerous to prescribe opioid pain relievers and benzodiazepines together because benzodiazepines enhance the euphoric feeling that people get from the opioids (Lautieri, 2019). This can lead to depressed breathing and enhanced sedation, which can result in death if emergency medical assistance is not retrieved in time (Lautieri, 2019).

This DNP project was implemented based off of The Diffusions of Innovations Theory by Everett Rogers which has five different stages that occur as someone adopts a new idea or practice (Kaminski, 2011). These five stages are knowledge and awareness, persuasion and interest, decision/evaluation, implementation/trial, and confirmation/adoption (Handricks-

Jackson & Hawkes, 2017). This theory fit the DNP project well, seeing how participants needed to first recognize their own personal knowledge and awareness of the guidelines (stage one) followed by being subjected to information about the guidelines (stage 2). After this, participants decided whether or not they were going to follow these guidelines if they are not already (stage 3). Stage 4, which is the implementation/trial stage, was touched upon when patients realized that they already include the guidelines in their practice, or that they will in the future. The fifth and final stage, confirmation and adoption, was met when participants had to decide whether or not they would change their practice based on reviewing the guidelines fact sheet.

Although this DNP project was completed with 12 participants, there were some things that could have been done to obtain a larger sample size. The Massachusetts Coalition of Nurse Practitioners sent out one email to its members, giving them the chance to participate in the project. This was sent out on a Saturday morning so that people could have time over the weekend to complete the project if they so choose. However, this was recognized as a barrier because perhaps some people used their work email and were not going to check their email again until Monday morning. Another barrier that was documented was the fact that the email from the MCNP somehow ended up in some people's spam folders. If people do not regularly check their spam folders, it is possible that people who would have participated did not even see the original email.

The objectives and goals of the project were met through multiple means. The awareness, knowledge, and comfort level of the NPs who participated was assessed through the prescribing survey. This survey was also useful in assessing the frequency that NPs prescribe opioids and the rate at which medication assisted treatment is used. The post-education survey assessed if NPs

will change their practice after reviewing the guidelines, as well as what can be done to address the opioid issue in their area.

Conclusion

The opioid crisis is an extensive problem in the United States and in other areas of the world. There has been an increase in the number of prescription opioids prescribed by health care providers in the United States. This issue is partially due to the over-prescribing of opioids by health care providers.

The nurse practitioners surveyed on average prescribed prescription opioids monthly, if it all, for their patients. Most agreed that non-pharmacologic therapy and non-opioid therapy should be used first to treat pain. However, it is apparent that NPs need to be more diligent about administering urine drug tests before starting and during opioid therapy. It was also apparent that there are not enough providers who offer or arrange for medication-assisted treatment for those with opioid use disorders. More than one participant stated that access to substance abuse treatment centers and mental health services needs to broaden, as well as the Suboxone waiver certification for providers.

Another issue is the fact that the public needs to be educated on the risks of opioid use. The general public does know about how extensive the opioid crisis is, but perhaps they do not understand the specific details of it. It was proven that nurse practitioners do sometimes feel pressured by their patients to prescribe opioids for pain, and this is a significant opportunity to educate about the risks of opioid prescribing.

Overall, the number of prescription opioids being dispersed is a problem, but there are other issues to be addressed in the end. The public needs to be educated more on the issue, whether it be in the clinical setting or other places. The lack of treatment needs to be addressed

by creating easier access to mental health services, substance abuse treatment centers, and by increasing medication-assisted treatment options.

References

- Barclay, J., Owens, J., & Blackhall, L. (2014) Screening for substance abuse risk in cancer patient using the Opioid Risk Tool and Urine Drug Screen. *Support Cancer Care*, 22, 1883-1888. DOI: 10.1007/s00520-014-2167-6
- Barth, K., Balliet, W., Pelic, C., Madan, A., Malcolm, R., Adams, D., Morgan, K., Owczarski, S., & Borckardt, J. (2014). Screening for Current Opioid Misuse and Associated Risk Factors Among Patients with Chronic Nonalcoholic Pancreatitis Pain. *Pain Medicine*, 15, 1359-1364. Retrieved from <http://web.ebscohost.com/silk.library.umass.edu/ehost/pdfviewer/pdfviewer?vid=14&sid=55146177-b79c-4e29-b45e-4da0b08cd076%40sessionmgr103>
- Brown, R., Deyo, B., Riley, C., Quanbeck, A., Glass, J., Turpin, R., Hetzel, S., Nicholas, C., Cruz, M., & Agarwal, S. (2017). Screening in Trauma for Opioid Misuse Prevention (STOMP): study protocol for the development of an opioid risk screening tool for victims of injury. *Addiction Science & Clinical Practice*, 12(28). DOI: 10.1186/s13722-017-0097-6
- Busse, J., Juurlink, D., & Guyatt, G. (2016). Addressing the limitations of the CDC guideline for prescribing opioids for chronic noncancer pain. *CMAJ*, 188, 17-18. doi: 10.1503/cmaj.161023
- Centers for Disease Control and Prevention (CDC). (2016). CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. *Recommendations and Reports*, 65(1), 1-52. Retrieved from <https://www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6501e1.pdf>

- Clark, M., Hurley, R., & Adams, M. (2018). Reassessing the Validity of the Opioid Risk Tool in a Tertiary Academic Pain Management Center Population. *Pain Medicine, 19*, 1382-1395. doi: 10.1093/pm/pnx332
- Cochran, G., Bacci, J., Ylioja, T., Hruschak, V., Miller, S., Seybert, A., & Tarter, R. (2016). Prescription opioid use: Patient characteristics and misuse in community pharmacy. *Journal of the American Pharmacists Association, 56*, 248-256. doi: 10.1016/j.japh.2016.02.012
- Dowell, D., Haegerich, T., & Chou, R. (2016). CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. *JAMA, 315*(15), 1624-1645. doi: 10.1001/jama.2016.1464
- Garcia, M., Heilig, C., Lee, S., Faul, M., Guy, G., Iademarco, M., Hempstead, K., Raymond, D., & Gray, J. (2019). Opioid Prescribing Rates in Nonmetropolitan and Metropolitan Counties Among Primary Care Providers Using an Electronic Health Record System—United States, 2014-2017. *Centers for Disease Control and Prevention MMWR, 68*(2). Retrieved from <http://web.b.ebscohost.com/silk.library.umass.edu/ehost/pdfviewer/pdfviewer?vid=3&sid=ef8263ef-8ed0-4d51-870d-ddfdee1f83ba%40sessionmgr102>
- Handricks-Jackson, L. & Hawkes, B. (2017). *Nursing Professional Development Review and Resource Manual, 4th Edition*. Silver Spring, MD: American Nurses Credentialing Center.
- Just, J., Bingener, L., Bleckwenn, M., Schnakenberg, R., & Weckbecker, K. (2018). Risk of opioid misuse in chronic non-cancer pain in primary care patients—a cross-sectional study. *BMC Family Practice, 19*. Retrieved from

<http://web.a.ebscohost.com.silk.library.umass.edu/ehost/pdfviewer/pdfviewer?vid=12&sid=ae5fcef7-5324-4d17-959e-a0e7c50aa475%40sdc-v-sessmgr01>

Kaminski, J. (2011). Diffusion of Innovation Theory. *Canadian Journal of Nursing Informatics*, 6(2). Retrieved from <http://cjni.net/journal/?p=1444>

Koyalagunta, D., Bruera, E., Aigner, C., Nusrat, H., Driver, L., & Novy, D. (2013). Risk Stratification of Opioid Misuse among Patients with Cancer Pain Using the SOAPP-SF. *Pain Medicine*, 14, 667-675. Retrieved from <http://web.b.ebscohost.com.silk.library.umass.edu/ehost/pdfviewer/pdfviewer?vid=35&sid=b4810805-b5cc-4acd-b094-31c2bad3accf%40sessionmgr104>

Lautieri, A. (2019). *Dangers of Mixing Opiates and Benzodiazepines: Vicodin, Xanax, Oxycodone, and Valium*. Retrieved from <https://americanaddictioncenters.org/prescription-drugs/dangers-of-mixing>

Ling, W., Mooney, L., & Hillhouse, M. (2011). Prescription opioid abuse, pain, and addiction: Clinical issues and implications. *Drug and Alcohol Review*, 30, 300-305. doi: 10.1111/j.1465-3362.2010.00271.x

Madras, B. (2017). The Surge of Opioid Use, Addiction, and Overdoses: Responsibility and Response of the US Health Care System. *JAMA Psychiatry*, 74(5), 441-442. doi: 10.1001/jamapsychiatry.2017.0163

Massachusetts Coalition of Nurse Practitioners (MCNP). (2020). *Our Mission and Vision*. Retrieved from <https://mcnpweb.site-ym.com/page/AboutMCNP>

Meltzer, E., Rybin, D., Saitz, R., Samet, J., Schwartz, S., Butler, S., & Liebschutz, J. (2011). Identifying prescription opioid use disorder in primary care: Diagnostic characteristics of the Current Opioid Misuse Measure (COMM). *Pain*, 152(2), 397-402. Retrieved from

<https://www-sciencedirect-com.silk.library.umass.edu/science/article/pii/S0304395910006913>

Muir, H. & Seymour, F. (2017). Screening tools to assess risk of opioid abuse in the Canadian primary healthcare setting. *The Nurse Practitioner*, 42(6). doi: 10.1097/01.NPR.0000508172.41410.3b

National Institutes of Health. (2018). *Substance Abuse, Oral*. Retrieved from <https://meshb.nlm.nih.gov/record/ui?ui=D000075067>

O'Mahony, S., Bines, S., Gerhart, J., Bagwell, E., Marlene, M., & Card, A. (2018). Managing Pain in Patients with Chronic Medical Illnesses and Serious Mental Illnesses. *American Journal of Hospice & Palliative Medicine*, 35(6), 825-828. DOI: 10.1177/1049909117739300

Reyes-Gibby, C., Anderson, K., & Todd, K. (2016). Risk for Opioid Misuse Among Emergency Department Cancer Patients. *Academic Emergency Medicine*, 23(2), 151-158. Retrieved from <https://onlinelibrary-wiley-com.silk.library.umass.edu/doi/full/10.1111/acem.12861>

Terhaar, M., Taylor, L., & Sylvia, M. The Doctor of Nursing Practice: From Start-Up to Impact. *Nursing Education Perspectives*, 37(1), 3-9. doi: 10.5480/14-1519

University of Massachusetts Amherst. (2020). *Institutional Board Review*. Retrieved from <https://www.umass.edu/research/compliance/human-subjects-irb/irb>

Weiner, S., Horton, L., Green, T., & Butler, S. (2016). A comparison of an opioid abuse screening tool and prescription drug monitoring data in the emergency department. *Drug and Alcohol Dependence*, 159, 152-157. Retrieved from <https://www-sciencedirect-com.silk.library.umass.edu/science/article/pii/S0376871615018220>

Women's Healthcare. (2017). Prevention and Management of Opioid Misuse and Opioid Use Disorder Among Women Across the Lifespan. Retrieved from

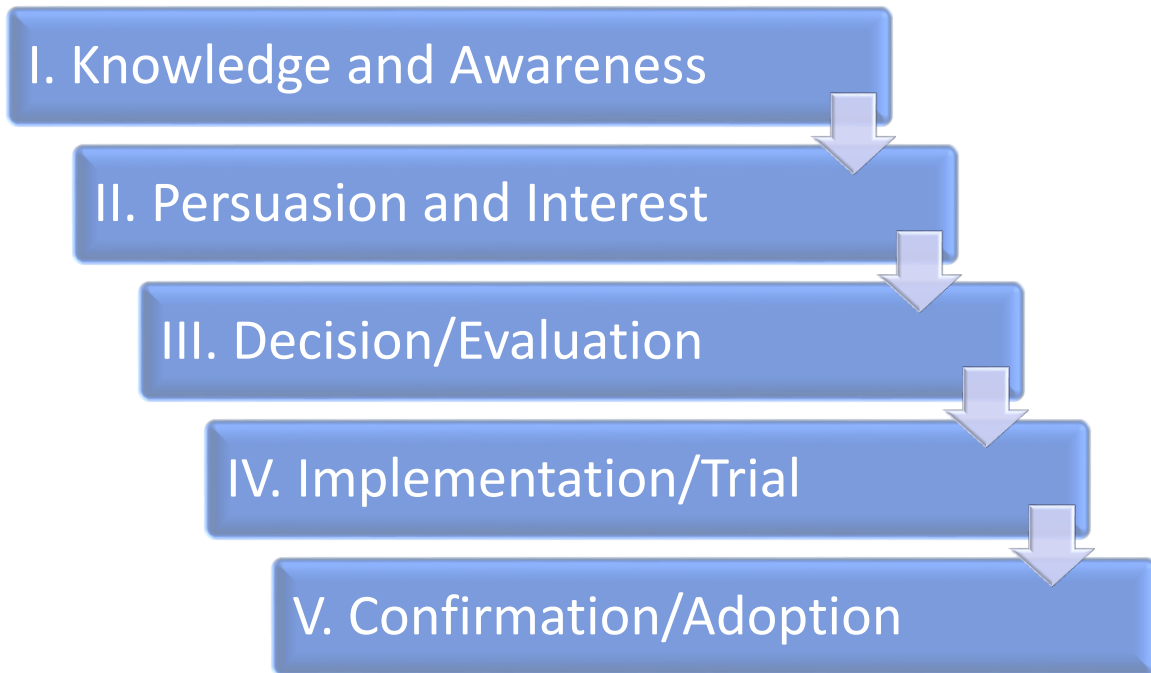
<http://web.b.ebscohost.com/silk.library.umass.edu/ehost/pdfviewer/pdfviewer?vid=6&sid=2d46576c-13f7-442b-a02f-b1ad0947143b%40pdc-v-sessmgr03>

Zgierska, A., Vidaver, R., Smith, P., Ales, M., Nisbet, K., Boss, D., Tuan, W., & Hahn, D.

(2018). Enhancing system-wide implementation of opioid prescribing guidelines in primary care: protocol for a stepped-wedge quality improvement project. *BMC Health Services Research*, 18(415), 1-8. doi: 10.1186/s12913-018-3227-2

Appendix A

Everett Rogers Diffusion of Innovations Theory



Appendix B

IRB Approval Letter

<file:///C:/Users/Amber/Downloads/ApprovalLetter%20-%207084.pdf>

Appendix C

Prescribing Survey

- 1.) What area of practice do you work in?
- 2.) How often do you prescribe opioid pain medications to patients?
 - a) Daily
 - b) Weekly
 - c) Monthly
- 3.) Do you agree with this statement: Non-pharmacologic therapy and non-opioid pharmacologic therapy are preferred for pain?
 - a) Yes
 - b) No
- 4.) Do you establish treatment goals before starting patients with chronic pain on opioid medications?
 - a) Ye
 - b) No
 - c) Sometimes

If yes, what do they include? (Optional)
- 5.) Before starting and periodically during opioid therapy, do you discuss with patients the known risks and realistic benefits and your responsibility for managing therapy?
 - a) Yes
 - b) No
- 6.) When starting opioid therapy for chronic pain, do you prescribe immediate-release opioids instead of extended-release/long-acting opioids?

a) Yes

b) No

7.) For acute pain, do you prescribe no greater quantity than needed for the expected duration of pain severe enough for required opioids?

a) Yes

b) No

8.) Do you routinely evaluate benefits and harms of continued therapy every three months?

Comments (if desired):

9.) Do you administer urine drug tests before starting opioid therapy to assess presence of prescribed opioids as well as other controlled and illicit drugs?

a) Yes

b) No

Comments (if desired):

10.) Do you avoid prescribing opioid pain medications and benzodiazepines concurrently whenever possible?

11.) Do you offer or arrange evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies) for patients with opioid-use disorder?

12.) Do you, as a provider with prescriptive authority, feel that you are manipulated or pressured by patients to prescribe opioid pain relievers?

a) Yes

b)

If yes, please describe:

Appendix D

Post-Education Survey

1.) Do you feel that you learned something new from reviewing these guidelines?

a) Yes

b) No

Please explain (optional):

2.) Will you change your practice based on these guidelines?

a) Yes

b) No

Please explain (optional):

3.) If you do not normally offer medication assisted treatment (MAT) at your practice to help patients wean off of opioids, would you consider offering it in the future?

a) Yes

b) No

c) I already offer MAT

4.) What is your view of opioid abuse in your area?

5.) What else is needed for providers to adequately address this issue in your area?

Appendix E

URL for Guidelines Fact Sheet created by the CDC

https://www.cdc.gov/drugoverdose/pdf/prescribing/Guidelines_Factsheet-a.pdf

