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Research, Evidence-Based Practice and Quality Improvement

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PROVIDER EDUCATION FOR OPIOID REDUCTION

by

TONYA TRAYLOR

A DNP scholarly project submitted in partial
fulfillment of the requirements for the degree of

Doctorate of Nursing

Department of Nursing

Sandra Petersen, Ph.D., Committee Chair

College of Nursing

The University of Texas at Tyler

May 2019

The University of Texas at Tyler
Tyler, Texas

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Abstract

PROVIDER EDUCATION FOR OPIOID REDUCTION

Tonya Traylor

DNP Scholarly Project, Faculty Member: Sandra Petersen, Ph.D.

**The University of Texas at Tyler
May 2019**

Background: The United States is in the midst of an opioid epidemic. In 2012 alone there were approximately 259 million prescriptions written by primary care providers for opioids painkillers. The U.S. Center for Disease Control (CDC) now has new guidelines and recommendation due to the opioid analgesic epidemic. Education has been found to raise provider awareness and, subsequently, has decreased opioid use. Provider education helps with reinforcing the short-term use of opioids and adjunctive therapies and helps reinforce the idea of an individualized treatment plan for patients. Purpose: The purpose of this intervention is to increase provider education on opioid therapy prescribing guidelines. Intervention: Add provider education on the prescribing of opioids therapy guidelines. Results: There was an increase of 85% in provider knowledge and 33% decrease in opioid use. Conclusion: In conclusion adding provider education on opioid therapy guidelines helped to increase provider knowledge and decrease opioid use. Improving opioids prescribing through provider education on national chronic opioid therapy clinical practice guidelines ensure patients have access to safer, more effective chronic pain treatment while reducing the number of people who misuse, abuse, or overdose from these drugs.

Chapter 1 Development of the Clinical Question and Problem Identification

(EPB Process Steps 0, 1, & 2)

Background and Significance

In 2012 alone there were approximately 259 million prescriptions written by primary care providers for opioids painkillers (CDC,2014). The financial cost is substantial and a direct result of increased healthcare utilization. Healthcare costs for opioid abusers were 8 times higher than non-abusers, with an average per-person cost of \$15,884 for abusers compared to \$1830 for non-abusers (Hahn, 2011). The Center for Disease Control (CDC) cites that in 2016, 1 in 550 died from an opioid-related overdose. In late 2015 guidelines were drafted and recommended non-opioid approaches such as physical therapy which can serve as a primary strategy to reducing prescription pain medication abuse and improve the quality of life in patients with (CP) chronic pain (Dowell, Haegerich, & Chou, 2016). The National Center for Complementary and Integrative Health reports that 126 million Americans suffer from chronic pain and is the leading cause of prescription opioid use (NIH, 2015). The U.S. Center for Disease Control (CDC) now has new guidelines and recommendation due to the opioid analgesic epidemic. The guidelines for opioid therapy is short-term use only and not to exceed 90 days, except for the acute on chronic phase (Dowell et al., 2016). Education has been found to raise provider awareness and, subsequently, has decreased opioid use (Alford et al., 2016). While the number of prescriptions has decreased since 1999, the number of opioid prescriptions remains inordinately high in some areas of the country. Between 1997 and 2006, retail sales of opioids have increased, hydrocodone increased by 244%, oxycodone by 732%, and methadone by 1177% (Hahn, 2011).

Chronic pain leads to adverse physical and psychological outcomes for patients and their families underscoring the importance of intervention by knowledgeable providers (Well, Pasero, & McCaffery, 2015).

Taken as directed, opioids can manage pain effectively when used for a short amount of time. With long-term use, however, people need to be screened and monitored because some treated will develop an addiction disorder, abuse the drugs, or give them to others (NIH, 2015). Long-term daily use of opioids leads to physical dependence and may result in addiction disorder. An addiction disorder occurs in about 5 percent of people who take these pain relievers as directed over the period of a year (NIH, 2011). Provider education helps with reinforcing the short-term use of opioids and adjunctive therapies and helps reinforce the idea of an individualized treatment plan for patients (Hawk, Vaca, & D'Onofrio, 2015). Providers must be well-versed on how to assess and tailor individual treatment plans, as each patient has a different perception of pain and varying responses to treatment. Some patients may require opioid analgesics alone, but for others, providers may be required to craft a different and more effective approach (Chronic Pain, 2016). Chou (2016) stressed the importance of approaching pain, both physically and emotionally and addressing "people as entire human beings." Pain medication can be effective and important for pain management, but it cannot be the only tool used in the management of pain. Improved interventions by knowledgeable providers can enhance patients' attitudes and perceptions of pain. What the provider understands that pain is critical in influencing the patient's reaction to the pain therapy provided. The goal of pain management is to prevent and control pain without creating poor outcomes for patients such as physical dependence and addiction (Chou, 2016).

The proper guidelines must be in place to meet the goals of pain control. Implementation of the guidelines will require a comprehensive approach to risk reduction fostered by providing extensive provider education on safe opioid prescribing (Hahn, 2011). The guidelines include recognizing and treating pain promptly; involving patient and families in pain management plan; improving treatment patterns; reassessing and adjusting the pain management plan as needed; and, monitoring processes and outcomes of pain management (Well et al., 2015). Chronic Pain managed by a variety of different interventions improves outcomes. The intervention that causes the greatest concern is opioid analgesic therapy, as inappropriate prescribing and management may lead to overuse and addiction.

Improving opioids prescribing through provider education regarding national chronic opioid therapy clinical practice guidelines (i.e. not exceeding the 90 days' recommendation) can ensure patients have access to safer, more effective chronic pain treatment while reducing the number of people who misuse, abuse, or overdose from these drugs. The CDC guidelines introduced recommendations for the prescribing of opioid pain medication for patients 18 and older in primary care settings. The recommendations focus on the use of opioid in the treatment of chronic pain (pain that lasts longer than 90 days or past the time of normal tissue healing) outside of active cancer treatment, palliative care, and end of life care (Gladkowski et al., 2014).

Pain management uses a predictor scale to determine if the patient is a candidate for long-term opioid analgesic therapy. The Institute for Clinical Systems Improvements recommends using diagnosis, intractability, risk and efficacy score to determine the treatment of opioid analgesic therapy for chronic pain. The risk category is divided into four subcategories: psychological health, chemical health, reliability, and social support.

The score range is 7-21 the higher the score, the greater the potential benefit of opioid analgesic treatment. Treatment utilizing opioid analgesia is controversial due to the negative side effects, abuse potential, and ineffectiveness (Gladkowski et al., 2014). The CDC has recommended not using opioid analgesics as a first-line treatment for chronic pain. CDC experts stress that non-opioid therapy should be utilized and optimized before considering opioid analgesics. Consistent reassessment of patients issued opioid analgesic therapy is also emphasized (Dowell, Haegerich, & Chou, 2016).

Despite the opioid epidemic, the medical professionals at my facility receive little to no training on the education for opioid prescribing, substance abuse prevention and treatment. The current percentage of providers at the facility that has had formal education on opioid prescribing national clinical guidelines is 5%. Most of the referrals to the facility are over the 90-day recommendation for opioid therapy. Currently, 85% of the patients at the facility are on long term opioid therapy greater than 5 years. There were over 80% of the providers at the facility that expressed that they were not satisfied with their current knowledge base and needed further education/training.

The education of providers regarding national chronic opioid therapy clinical guidelines for prescribing opioids for chronic pain in order to decrease the use of opioids is the focus of this work. How providers care for chronic pain patients on chronic opioid therapy is the key to better treatment, results, and less addiction. In order to provide better care for chronic pain patients on chronic opioid therapy, providers must be educated on the clinical guidelines. The Chronic National Opioid Therapy Clinical Guidelines include assessing patient risk level by screening patients, controlled substance agreements, urine drug testing, pill counts, regular visits, prescribing appropriately using dosing protocol, educating and communicating with patients (Bhatt & Arespachaga, 2017).

Development of the clinical question and problem

Therefore, the question arises. How does education of providers in practice, compared to no education, affect opioid reduction in 3 months?

Selection of EBP Model

The Evidence-Based Practice Model used is the Iowa Model (see Appendix E). The Iowa Model guides nurses and other clinicians to make decisions about clinical and administrative practices that affect patient outcomes. Basing practice on research findings or other evidence is facilitated through The Iowa Model. The Iowa Model guides clinical decision-making and EBP process from both the clinician and systems perspectives (Melnyk & Fineout-Overholt, 2015).

Systematic Search

An extensive literature review was conducted using the Cochrane Database of Systematic Reviews, PubMed and CINAHL complete. The initial search was limited to articles that included chronic pain and the English language. The keywords included chronic opioid therapy, chronic pain, providers, provider education, opioid reduction. The inclusion criteria included: provider education, chronic opioid therapy, chronic pain, and opioid reduction. The exclusion criteria were acute pain and nonopioid therapy. When all terms were searched, there was a yield of 202 articles. When provider education was searched, there was a yield of 123 articles. The search for provider education with opioid reduction yielded a total of 43 articles. The search yielded over 43 relevant articles, and after review seven articles meet the criteria (see Appendix A).

Chapter 2: Critical Appraisal of Evidence, Model of EBP & EPIP Plan:

Part 1

(EPB Process Steps 1, 2, 3, & 4)

Critical Appraisal/RCA/Evaluation and Synthesis

All 43 articles originated from three different databases; CINAHL, PubMed, and Cochrane included provider education. The first 15 articles did not meet the criteria. Five of the articles addressed acute pain; ten of the articles focused on nonopioid therapy, twenty-one articles did not include provider education with opioid reduction. Out of the 43 articles, 7 articles were retained for the project. The articles kept included four retrospective cohort studies, one quality improvement, one literature review and one randomized controlled trial (Appendix B). All 7 studies included provider education and opioid reduction (see Appendix B). Of the 7 studies, each article included provider education on national chronic opioid therapy clinical guidelines (see Appendix B). Each study included some form of provider education. All seven articles had interventions and outcomes that were similar and considered appropriate for the study (see Appendix B). Each article discussed the purpose of provider education to decrease the use of chronic opioid therapy.

The findings emphasize the importance of using provider education on the clinical guidelines to provide optimum treatment and obtain better outcomes for opioid reduction (see Appendix C). Each met the criteria of provider education and opioid reduction (Appendix B). The systematic review process included all the criteria and all available evidence to result in a positive outcome.

Theory Model

The identification and implementation of a mid-range theory are important in guiding research and then moving the research into practice (Walker & Avant, 2011). The goal of quality healthcare is to provide the optimum level of health to a person or client. In nursing, the outcome goal is comfort. Comfort has been considered to lead the recovery. Comfort is one of the distinguishing characteristics of the nursing profession (Domingo et al., 2011).

The Comfort Theory is a mid-range theory developed by Katherine Kolcaba in the 1990s that focus on comfort and the main concept (Callaghan, Belda, & Centopanti, 2013). The Comfort Theory is for health practice, education and research. It has the potential to place comfort at the forefront of healthcare (Domingo et al., 2011). Comfort has three forms; relief, ease, and transcendence. It also includes four contexts where patient comfort can happen; physical, psychospiritual, environmental and sociocultural. Comfort as the concept is a positive concept that is associated with activities that nurture and strengthen patients (Domingo et al., 2011). The Comfort Theory emphasizes the physical, psychospiritual, sociocultural and the environmental aspect of comfort and will contribute to a proactive and multifaceted approach to care. The framework of the theory is easy to understand and implement (Kolcaba & DiMarco, 2005). Appendix D contains a schematic of how this framework applies to the project.

Theoretical Framework

Comfort has three existing forms; relief, ease, and transcendence. Relief is a feeling of reassurance and relaxation following a release of distress (Merriam-Webster, 1999). Ease is the absence of difficulty or effort (Merriam-Webster, 1999).

Transcendence is the quality or state of exceeding usual limits (Merriam-Webster, 1999). If the outcome is comfort, the patient will experience a sense of relief from opioid addiction. Ease will allow a state of contentment from comfort. Transcendence will allow for comfort by letting the patient rise above the challenges of opioid addiction. The use of the concept treatment is mainly in healthcare and part of the interventions. Treatment's relation to the Comfort Theory Model is the therapy or interventions for illness (ease-administer medications, relieve anxiety), behavioral or psychological for addiction. Treatment that is related to the model by the implementation of any therapy, medication, chemical, a physical or biological agent used in the interventions of care.

The concept, "deception," is one of the health-seeking behaviors that profoundly impact the provider and patient. Most of the literature on deception in healthcare focus on untruths imparted to the provider by the patient. A patient may be deceptive for a variety of reasons including personal benefit to protect another person to gain some advantage, or for psychological or material reasons (Curtis, 2015). Comfort is the immediate desirable outcome of nursing care, and patients have been known to be deceptive in an attempt to achieve greater comfort (Domingo et al., 2011). Deception used by the nurse can be in an attempt to relieve anxiety.

How the Comfort Theory Model Will Guide the Project

The Comfort Theory model will guide the project by focusing on comfort. It will create a desirable outcome of an increase in provider education and a decreased use of opioids measured by a decrease in the number of opioids taken per day (see Appendix D). The first objective will be to identify the health care needs (lack of provider education and opioid addiction). The second will identify interventions for implementation

(provider education). The third will assess intervening variables (lack of knowledge, and resistance to change). The fourth is to enhance comfort (ease, relief, and transcendence). To enhance comfort, the use of provider education will strengthen the knowledge base on how to prescribe opioids. The fifth objective identifies any health seeking behavior (inpatient therapy; outpatient therapy, palliative care). The sixth objective includes institutional integrity (the values, financial stability, and wholeness of healthcare organizations at local, regional, state and national levels). The seventh is best practices and best policies (developed protocols and procedures for overall use after collecting evidence) (Domingo et al., 2011).

The Comfort Model will guide the project by first identifying the healthcare need for comfort from lack of provider education with clinical guidelines in chronic opioid therapy. The next step will identify the intervention of provider education. The use of best evidence, provider education will be added for three months to enhance and strengthen the knowledge of providers to decreasing chronic opioid use. The outcome will be an increase in provider knowledge indicated by a decrease in the number of opioid prescriptions written, the decreased in opioid doses and the length of time opioids are used in treatment.

Evidence-Based Practice Model

The Iowa Model guides the project by identifying the problem of the lack of provider education with national clinical guidelines in chronic opioid therapy. The evidence identified the need for change. The second step in the Iowa Model allows for review and critique of the available evidence which recommends provider education to reduce opioid use. The addition of provider education will increase knowledge of National Chronic Opioid Therapy Clinical Guidelines for prescribing opioids and a

decrease in the length of opioid use. The next step of the Iowa Model allows for the identification of the relevant evidence that supports the need for change in my clinical practice. The last step will allow for the implementation of the evidence and evaluation of the outcomes (see Appendix E).

Recommendation

The recommendation is to add provider education regarding national chronic opioid therapy guidelines to clinical practice (Appendix C). The evidence shows that adding provider education to chronic opioid therapy decrease opioid use (Appendix C).

Chapter 3: Project Design and Methodology

(EPB Process Steps 3-4)

Project Plan

The project plan is based on the body of evidence found from the search of three databases, Cochrane, PUBMED, and CINAHL. The terms searched were chronic opioid therapy, chronic pain, providers, provider education, and opioid reduction. The end search yielded 7 articles. The types of evidence used were five Cohort studies, one Random Control Trial's, and one QI (Appendix B). The major variables included Provider Education, EMR protocol, and New Policy implementation. Each of the 7 studies included provider education on national chronic opioid therapy clinical guidelines. Two studies used EMR protocol for education training, 3 studies implemented a new policy. Presentations were used in all but one of the studies. One study used a one-day workshop that included a presentation, handouts and post evaluation on educational knowledge with CME credit. One study used a 2-day workshop that included a presentation, handouts, and CME credit. One of the studies used an online 90-minute educational training with post expert training on chronic opioid therapy, substance abuse, and opioid reduction. Educational handouts were used in all but one study.

The Comfort Theory model guided the project by focusing on comfort to create a desirable outcome of increased provider knowledge and decrease use of opioids measured by a decrease in some opioids taken per day. The Comfort Theory allowed for the guidance of assessment, measurement, and evaluation of comfort for the patient (Appendix D).

The Iowa Model was used to guide the implementation of this project. The model allowed for the identification of triggers/problems as the first step. The second step reviewed and critiqued the evidence that was available. The third step in the model allowed for the identification of relevant evidence to support the need for change in my clinical practice. The final step will allow for the implementation of the evidence and evaluation of the outcomes (Appendix E).

The logic model guided the project like a blueprint for change. It was used for planning, implementation, and evaluating the outcomes. The logic model gave directions to the purpose, inputs, interventions, outputs, and outcomes and allows stakeholders the ability to understand the goals of the project (Appendix F).

Progress markers were used as a checklist to ensure that all milestones were being checked off during the progression of the implementation. The progress markers began with project design that was chosen in August 2017 and end with the completion of the implementation plan in June of 2018. There were multiple checkpoints during implementation to ensure the outcome of interventions are as expected (Appendix F).

The first week of April the implementation process will began. The protocol included the addition of provider education to interventional pain management providers on national chronic opioid therapy clinical guidelines for 90-days. Each provider was given a pre-test for prescribing opioids. The pre-test was on knowledge of national chronic opioid therapy clinical guidelines. Each week providers were given educational handouts on the national chronic opioid therapy clinical guidelines and a once a month presentation to review the education. A post-test was given at the end of the 90-days and 4th presentation.

Table 1.1 Implementation Timeline

Table 1. Implementation Timeline

| | |
|----------------|---|
| April 2, 2018 | First presentation on evidence and pretest |
| April 9, 2018 | Education presentation |
| April 16, 2018 | Educational handouts |
| April 23, 2018 | Education handouts |
| April 30, 2018 | Educational handouts and presentation |
| May 7, 2018 | Educational handouts |
| May 14, 2018 | Educational handouts |
| May 21, 2018 | Educational handouts |
| May 28, 2018 | Educational handouts and presentation |
| June 4, 2018 | Educational handouts |
| June 11, 2018 | Educational handouts |
| June 18, 2018 | Educational handouts and Final presentation |
| June 25,2018 | Post test |

Upon completion of the implementation plan, the QI metrics were integrated into all 19 Healthcare Express facilities. The data collected was integrated into the company project design. The guidelines and protocols were updated based on the outcomes and will be used in future treatment plans. The outcome for the provider increased in knowledge regarding National Chronic Opioid Therapy Clinical Guidelines. Also noted were a decrease in the length of opioid use, a decrease in opioid dosages provided to patients, and a decrease in prescriptions written for opioids (Appendix C).

I worked with Dr. Petersen to address key components to obtain UT TYLER DNP approval for implementation of this project. The Healthcare Express Organization approved the implementation of the project at the Healthcare Express facility. The organizational contract was signed and approved for student project implementation (Appendix G). The industry mentor contract was approved and signed (Appendix H).

Chapter 4: Project Outcomes, Impact, and Results

(EPB Process Step 5)

Completion outcomes: data collection, measurement, analysis, project results & impact

In January of 2018, there was a collaboration with the information technology (IT) department at Healthcare Express (HCE) to build specific reports for related opioid reduction management to measure opioid reduction protocol. In March of 2018, the HCE IT department completed the database for patients on chronic opioid therapy. By the end of March, there was a pre and post-test created on the National Chronic Opioid Therapy Guidelines to test providers knowledge.

The database was used to compare the outcomes of the opioid reduction after the implementation of provider education. There was a comparison of previous quarter revenue to post quarter revenue to measure outcomes for the increase. The pre and post-test were used for a measure of provider knowledge on the guidelines.

According to the database that was created, there were a total of 1080 patients that were on chronic opioid therapy. There were 22 providers in need of opioid therapy education. The first week of April 2018, all 22 providers at Healthcare Express were issued a pre-test on the National Chronic Opioid Therapy Guidelines to test their knowledge of opioid prescribing. April 2nd was the official implementation of a 4-hour presentation and pre-test. The pre-test was scored and kept on file for comparison with post-test.

The first presentation included the purpose and need for provider education on chronic opioid therapy guidelines. The Center for Disease Control and Prevention issued 12 guidelines for prescribing opioid therapy. Each week providers were given educational handouts on one of the National Chronic Opioid Therapy Guidelines. Once a month

presentation was done as checkpoints to go over guidelines and answer any questions. A post-test was given at the end of the 90 days and 4th presentation on June 25th, 2018. The following week the pre and post-test were compared for outcomes; the outcome showed an 85% increase in provider knowledge. Each provider states they had an increase in confidence in prescribing opioids.

In April of 2018, the implementation of the provider education began at Healthcare Express. In July 2018, the provider education knowledge was implemented into practice and was evaluated for outcomes at the end of August 2018. Out of the 1080 patients that were on chronic opioid therapy there was a decreased of 15% (162 patients) that weaned off opioids or left the clinic to pursue other options. The comparison of the before and after database showed a decrease of 33% in the number of opioids used. The comparison of pre and post quarter revenue showed an increase of 10% in revenue. This increase in revenue was from the number of orders for physical therapy, imaging, and procedures.

Due to these results of the project, there was a policy created for all Healthcare Express facilities. The policy mandated that all providers with the ability to prescribe opioids have official education on the National Chronic Opioid Therapy Guidelines. The policy ensures sustainability. The results show that with provider education there is a decrease in opioid use and will help decrease the opioid epidemic. The outcome of increase availability for new patients ensures sustainability with the increase in revenue.

Evidence shows that with provider education on the National Chronic Opioid Therapy Guidelines there will be a decrease in opioid use and an increase in provider knowledge and confidence for prescribing opioids (Bhatt & Arespacochaga, 2017). The outcome of this project shows a decrease of 33% in opioid use and an 85% increase in

provider knowledge for opioid prescribing. There was also an increase in revenue for the facility of 10%.

The implementation of provider education into practice created unanticipated consequences at Healthcare Express. There were patients that threatened self-harm and harm to others with this being expressed safety measures were taken to ensure the safety of the patients and staff. Collaboration with mental health was put in place for all patients needing help with coping skills. Implementation of evaluation for compliance for providers with chart checks by supervisors. Multiple providers stated they had sympathy for the patients when they became emotional and found it hard to remain compliant.

In 2015, the Center for Disease Control and Prevention (CDC), declared the United States (U.S.) in a state of the opioid epidemic. The CDC states that there is a wide variety in the prescribing of opioids due to provider education. The CDC drafted guidelines for the prescribing of chronic opioid therapy (CDC, 2016). Provider education on the National Chronic Opioid Therapy Guidelines will be placed into policy for the Healthcare Express facilities for all providers with the ability to prescribe opioids. All new providers will have mandatory education on opioid guidelines before starting practice. This plan will be implemented in all Healthcare Express facilities. The form of dissemination will be a new policy that will include all facilities.

Upon completion of this program in May of 2019, this project will be submitted to the Texas Pain Society for publication consideration. The results of this project will be shared internally within all 19 Healthcare Express facilities within the four states area. The outcomes of this project could help decrease the opioid epidemic and should be shared with the providers throughout the United States.

Problems were identified that needed change within my facility and created change using evidence-based practice. The DNP is a change agent and evaluator of care. The DNP is a leader in policy development, advocacy, education, management and practice for my facility. There will be a collaboration with other departments within the 19 Healthcare Express facilities to sustain change.

Chapter 5: Project Sustainability Discussion, Conclusions, and Dissemination

Recommendations (Step 6)

Discussion of project sustainability plans & implementation

In June of 2017, there was a problem identified at Healthcare Express. The problem was a lack of provider education on the prescribing of opioid therapy. After review of the opioid therapy database, it identified over 50% of the patients were on long term opioid therapy measuring greater than five years. There are 22 providers at the four facilities, and out of the 22 providers only 5% had formal provider education on the opioid therapy guidelines. The lack of education showed a wide variety in the way opioids were being prescribed at these facilities. A PICOT question was formed at this time: How does education of providers in practice compared to no education, affect opioid reduction in 90 days?

A systematic search of the literature was conducted using the Cochrane Database of Systematic Reviews, PubMed and CINAHL Complete. The terms searched were provider education, opioid therapy, opioid reduction, and chronic pain. There was a total of 202 articles with a total of 7 articles that met all criteria.

There was a theory model, EBP model, Logic model and progress makers created to help guide the progression and of the project throughout its implementation. The theoretical framework, the Iowa model, logic model, and progress markers were used for plan formation. The progress makers helped as checkpoints to ensure all milestones were meet and checked off during the progression of the implementation.

In January 2018, there was a collaboration with the IT department to establish a database of opioid therapy patients only. The database was used to monitor opioid reductions and measure opioid reduction outcomes. A pre and post-test was uploaded to the database to test provider pre and post knowledge outcomes. There was a review of the previous quarter revenue for comparison at the end of implementation.

The first week of April 2018 implementation began. The protocol included the addition of provider education to interventional pain management providers on national chronic opioid therapy clinical guidelines for 90 days. Each provider was given a pre-test for prescribing opioids. The pre-test was based on knowledge of national chronic opioid therapy clinical guidelines. Each week providers were given educational handouts on the national chronic opioid therapy clinical guidelines and a once a month presentation given over the education. A post-test was given at the end of the 90 days and 4th presentation.

In July 2018, the outcome of provider education knowledge was implemented into practice and was evaluated for outcomes at the end of August 2018. Out of the 1080 patients that were on chronic opioid therapy there was a decreased of 15% (162 patients) that weaned off opioids or left the clinic to pursue other options. The comparison of the before and after database showed a decrease of 33% in the number of opioids used. The comparison of pre and post quarter revenue showed an increase of 10% in revenue. This increase in revenue was from the number of orders for physical therapy, imaging, and procedures.

Due to the results of the project, there has been a new policy created for all 4 facilities. The policy mandates that all providers with the ability to prescribe opioids will have official education on the National Chronic Opioid Therapy Guidelines. The policy will ensure sustainability. The results show that with provider education there can be a

decrease in opioid use and the process, help decrease the opioid epidemic. The outcome will also ensure sustainability with the increase in revenue. There will be a collaboration with other departments within the facility to sustain change.

This company's impact plan is now based on the best evidence that was provided with greater than expected outcomes. The plan will be followed based on Evidence-based Practice to continue to ensure an expected outcome. All providers that are employed at HCE will have formal education on the opioid therapy guidelines before prescribing opioids.

In conclusion, the implementation of this quality improvement project that was based on EBP had a better than expected outcome for these 4 facilities in Northeast Texas. Evidence shows that with provider education on the National Chronic Opioid Therapy Guidelines there will be a decrease in opioid use and an increase in provider knowledge and confidence for prescribing opioids (Bhatt and Arespachaga, 2017). The outcomes of this project show a decrease of 33% use of opioids and 85% increase in provider knowledge for prescribing opioids.

Health Care Express clinics can foresee a greater reduction in the use of opioids. And therefore, help with the decrease of the opioid epidemic and continue to be advocates for chronic pain patients without the fear of addiction.

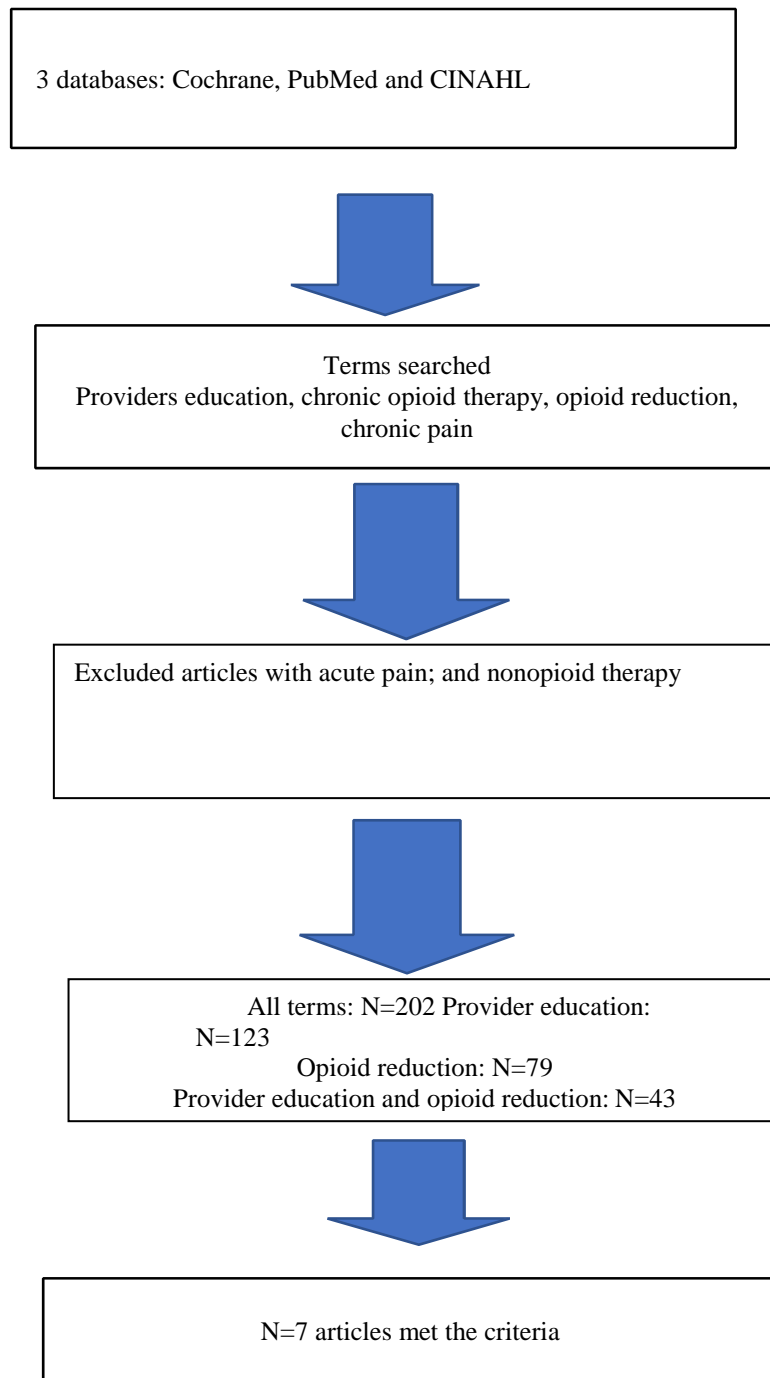
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Appendix A



Appendix B

| Citation: author(s), date of publication & title | Purpose of Study | Conceptual Framework | Design/ Methods | Sample/ Setting | Major Variables Studied and Their Definitions | Measurement of Major Variables | Data Analysis | Studying Findings | Appraisal of Worth to Practice Strength of the Evidence (i.e., level of evidence + quality [study strengths and weakness]) RECOMMENDATIONS |
|--|--|----------------------|-----------------|--|---|---|---|--|---|
| Canada, Robin E, et al. "A Better Approach to Opioid Prescribing in Primary Care." The Journal of Family Practice, University of Pennsylvania, Division of General Internal Medicine, Philadelphia, 6 June 2014, www.mdedge.com/jfponline. | Educate PCP on (CNCP) on opioid management | None | QI | N:25 settings 3 PCP at the Division of GIM at University Pennsylvania | IV: 4 education training session DV: improved all measured outcomes | (scales): Pre/post-test on UDS + CP diagnosis: Compare using t-tests | Pre/Post test | Knowledge on Chronic opioid improved significantly for PCP decrease # of pts prescribed opioid | <ul style="list-style-type: none"> Weakness: don't apply to nonacademic Strength: Positive impact p to best practice Conclusion: positive impact on PCP behavior attitudes and knowledge decrease in opioid use <p>Recommendation: for implementation to practice for opioid reduction</p> |
| Thomas Jeatt for Taylor & FrancisWeimer, Melissa B, et al. "A Chronic Opioid Therapy Dose Reduction Policy in Primary Care." <i>Routledge</i> , Taylor & Francis Group, Jan. 2016, taylorandfrancis.com/. | Reduce Chronic opioid use | none | Cohort study | N=82 setting: OHSU/ MC | IV: evaluate change of opioid use after PCP education and adaption of limitation policy DV: average daily dose of opioids declined by 64 mg and 41 pts doses | (Scales) Pre/Post-test of dosage GEEs & Huber- White sandwich variance estimator to examine impact of intervention all stats | Predose: N=112 pt. on high dose opioid the average total MED declined from 263 to 199 mg MED in post intervention | Intervention of provider education that limit opioid doses decreased opioid average daily dose and | <ul style="list-style-type: none"> Weakness: Single clinic study, and small sample size Strengths: Use quality indicator to measure focused on process and outcome indicator Conclusions: Intervention of provider education on practice policy show decrease in opioid use Feasibility: reasonable to implement provider education and |

| Citation: author(s), date of publication & title | Purpose of Study | Conceptual Framework | Design/ Methods | Sample/ Setting | Major Variables Studied and Their Definitions | Measurement of Major Variables | Data Analysis | Studying Findings | Appraisal of Worth to Practice Strength of the Evidence (i.e., level of evidence + quality [study strengths and weakness]) RECOMMENDATIONS |
|---|---|----------------------|-----------------------------|--|---|--|--|--|---|
| Lasser, Karen E, et al. "A Multicomponent Intervention to Improve Primary Care Provider Adherence to Chronic Opioid Therapy Guidelines and Reduce Opioid Misuse: A Cluster Randomized Controlled Trial Protocol." Journal of Substance Abuse Treatment, Elsevier, Oct. 2015, dx.doi.org/. | To improve providers education to improve adherence to guidelines and reduce opioid use | None | Random controlled trial | N=53 PCP setting: 3 Boston area community health centers | IV: PCP education DV: PCP adherence to chronic opioid therapy guidelines and opioid misuse | Compare controlled PCP and Non-controlled PCP: Controlled PCP received education & training | 2 group study N=50 PCP's with 15%-point difference of the proportions Odd/ratio with 95% CI | Increased provider edu & monitoring and decrease in opioid use and misuse | <ul style="list-style-type: none"> Weakness: Unable to determine individual effect of intervention: have to use electronic tools Strengths: Random controlled trial Conclusions: higher percentage of adherence guided R/T PCP educations Feasibility: Recommended for implementation to practice |
| Leung, Lawrence J., "Provider Education & Requirements for Opioid Prescriptions" (2017). Family Medicine Block Clerkship, Student Projects. 292. http://scholarworks.uvm.edu/fmclerk/292 | Control & decrease opioid use among providers | None | Literature review (level 5) | Database/ at Community Health Centers of Burlington (CHCB) | IV: educational handouts to providers. Presentations, and discussion of guidelines and regulations DV: decrease provider prescription of opioids and decrease opioid use and addiction | (Scale to measure) Provider response to education: Pre/Post evaluation | Pre/Post quantitative show impermeant in | Quantitative measure of decreased use of opioids, increase in providers adherence to opioid guidelines | <ul style="list-style-type: none"> Weakness: Subjective to pain Strengths: use of quality indicators focused on process and outcomes Feasibility: recommendations are feasible and contain for implementation to practice. |

| Citation: author(s), date of publication & title | Purpose of Study | Conceptual Framework | Design/ Methods | Sample/ Setting | Major Variables Studied and Their Definitions | Measurement of Major Variables | Data Analysis | Studying Findings | Appraisal of Worth to Practice Strength of the Evidence (i.e., level of evidence + quality [study strengths and weakness]) RECOMMENDATIONS |
|---|--|----------------------|-----------------|--|---|--|--|--|--|
| Sirvastava, Anita, et al. "Prescription Opioid Use and Misuse." The College of Family Physicians of Canada, Canadian Family Physician, Apr. 2012, www.cfpc.ca/CanadianFamilyPhysician/ . | Will the feasibility & effectiveness of an educational intervention to improve & reduce opioid use | none | Cohort study | N=18 PCP Setting: St. Joseph's Health Center in Toronto, Ontario | IV: 1day provider educational workshop DV: Decreased opioid | (Scales) Pre /Post | (P=.028) & (P=.041) | Increase in provider edu & decrease in opioids | <ul style="list-style-type: none"> Weakness: Direct practice changes not assess Strengths: in-depth interview with PCP continued practice changes for safer opioid prescription Conclusion: effective at reducing PCP opioid prescribing & addiction Feasibility: recommended for implementation to practice |
| Pain, Clin J. "Evaluation of Health Plan Intervention to Influence Chronic Opioid Therapy Prescribing." <i>HHS.gov</i> , US Department of Health and Human Services, 23 Jan. 2015, www.hhs.gov/open/publicaccess/index.html . | Will PCP education intervention of Chronic Opioid therapy prescribing | None | Cohort study | N=224 (PCP) Setting: GH IGP at Washington State | IV: PCP education on guideline adherence & online surveys DV: daily opioid dose declined | (Scales) Pre/Post-test (using p-value) | Comparison of Pre/Post evaluation using SAS software Decrease in daily opioid from 76.2 to 68.8 (35%) reduction | Decrease in opioid daily dose of 35% continual decline | <ul style="list-style-type: none"> Weakness: a single site measured immediately after cause Strengths: higher course participation rate focus on chronic opioid therapy Conclusion: Mean opioid dose declined in intervention PCP reported more conservative beliefs regarding opioid prescribing after education intervention Feasibility: recommended for implementation |

| Citation: author(s), date of publication & title | Purpose of Study | Conceptual Framework | Design/ Methods | Sample/ Setting | Major Variables Studied and Their Definitions | Measurement of Major Variables | Data Analysis | Studying Findings | Appraisal of Worth to Practice Strength of the Evidence (i.e., level of evidence + quality [study strengths and weakness]) RECOMMENDATIONS |
|--|--|----------------------|--------------------|--|--|--------------------------------|---------------|---|--|
| Kahan, Meldon, et al. "Effect of a Course-Based Intervention and Effect of Medical Regulation on Physicians' Opioid Prescribing." <i>The College of Family Physicians of Canada Can Fam Physician</i> , Sept. 2013, www.cfpc.ca/CanadianFamilyPhysician/ . | Evaluate the effectiveness of 2-day edu course on PCP prescribing of opioids | None | Retro-Cohort study | N=180 Setting: College of Physicians and Surgeons in Toronto, Ontario | IV: 2 day opioid prescribing edu course DV: reduce quantity of opioids prescribed | Pre course & Post Course eval | P-value | Decrease opioid prescribing rate of 43.9% in 1 year following course completion | <ul style="list-style-type: none"> Weakness: only quantity measured not quality of opioid prescribed : small members of high risk patients Strengths: wide spread provided detailing Conclusion: significant (P<.001) & sustained reduction in opioid prescribing Feasibility: recommended implementation practice to reduce opioid prescribing |

Appendix C: Synthesis Tables

Table 1.0 Synthesis of Type of Evidence

| Type of Evidence | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| Level I: Systematic review or meta-analysis | | | | | | | |
| Level II: Randomized controlled trials | | | X | | | | |
| Level III: Controlled trial without randomization | | | | | | | |
| Level IV: Case-control or cohort study | | X | | X | X | X | X |
| Level V: Systematic review of qualitative or descriptive studies | | | | | | | |
| Level VI: Qualitative or descriptive study (includes evidence implementation projects) | X | | | | | | |
| Level VII: Expert opinion or consensus | | | | | | | |

Table 2.0 Synthesis: Interventions

| Major Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------------|---|---|---|---|---|---|---|
| Provider Education | X | X | X | X | X | X | X |
| EMR Protocol | X | | X | | | | |
| New policy | | X | | | | X | X |

Table 3.0 Types of Education

| Major Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| | | | | | | | |
| Presentations | X | X | X | X | X | | X |
| 1-day workshop | | | | | X | | |
| 2-day workshop | | | | | | | X |
| Training by expert | | | | | | | |
| Online courses | X | X | X | | | X | |
| Handouts | | X | X | X | X | X | X |
| National chronic opioid therapy guidelines | X | X | X | X | X | X | X |

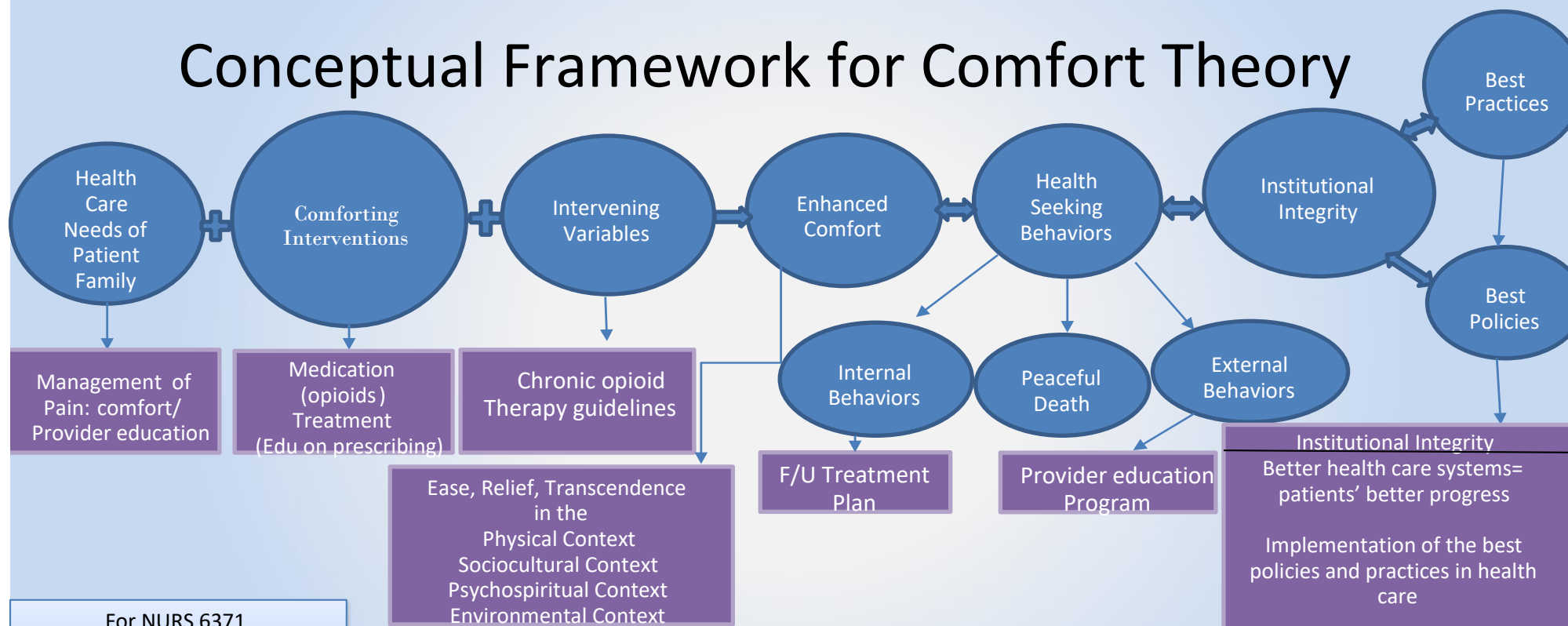
Table 4.0 Synthesis: Outcomes

| Major Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------------|---|---|---|---|---|---|---|
| Opioid reduction | X | X | X | X | X | X | X |
| Provider Education | ↑ | ↑ | ↑ | ↑ | | ↑ | ↑ |

Table 5.0 Synthesis: Timeframe

| Time of Intervention | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------------|---|---|---|---|---|---|---|
| 3-months | | X | X | | | X | |
| 6-month | X | | | | | | X |
| 1-year | | | | | X | | |

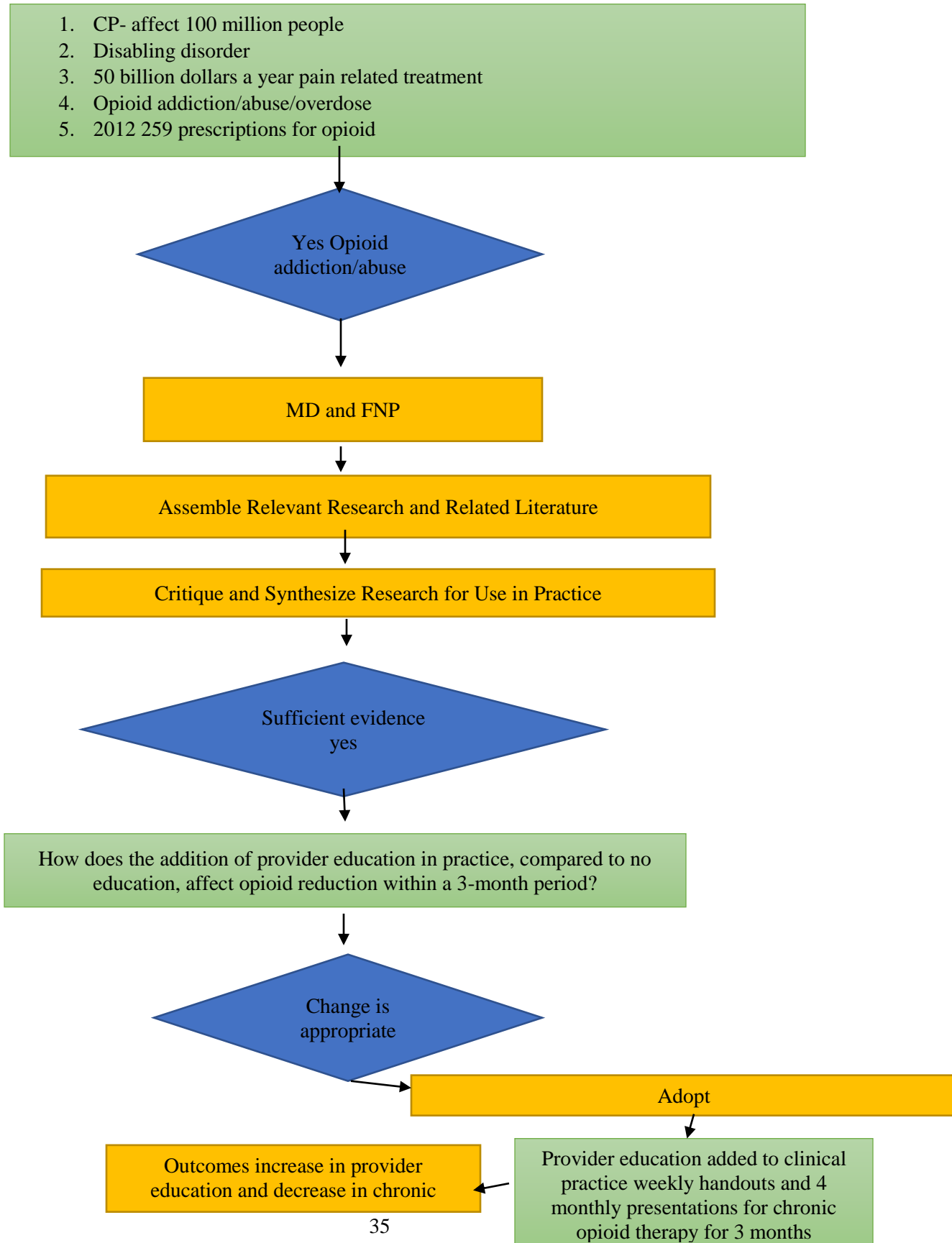
Conceptual Framework for Comfort Theory

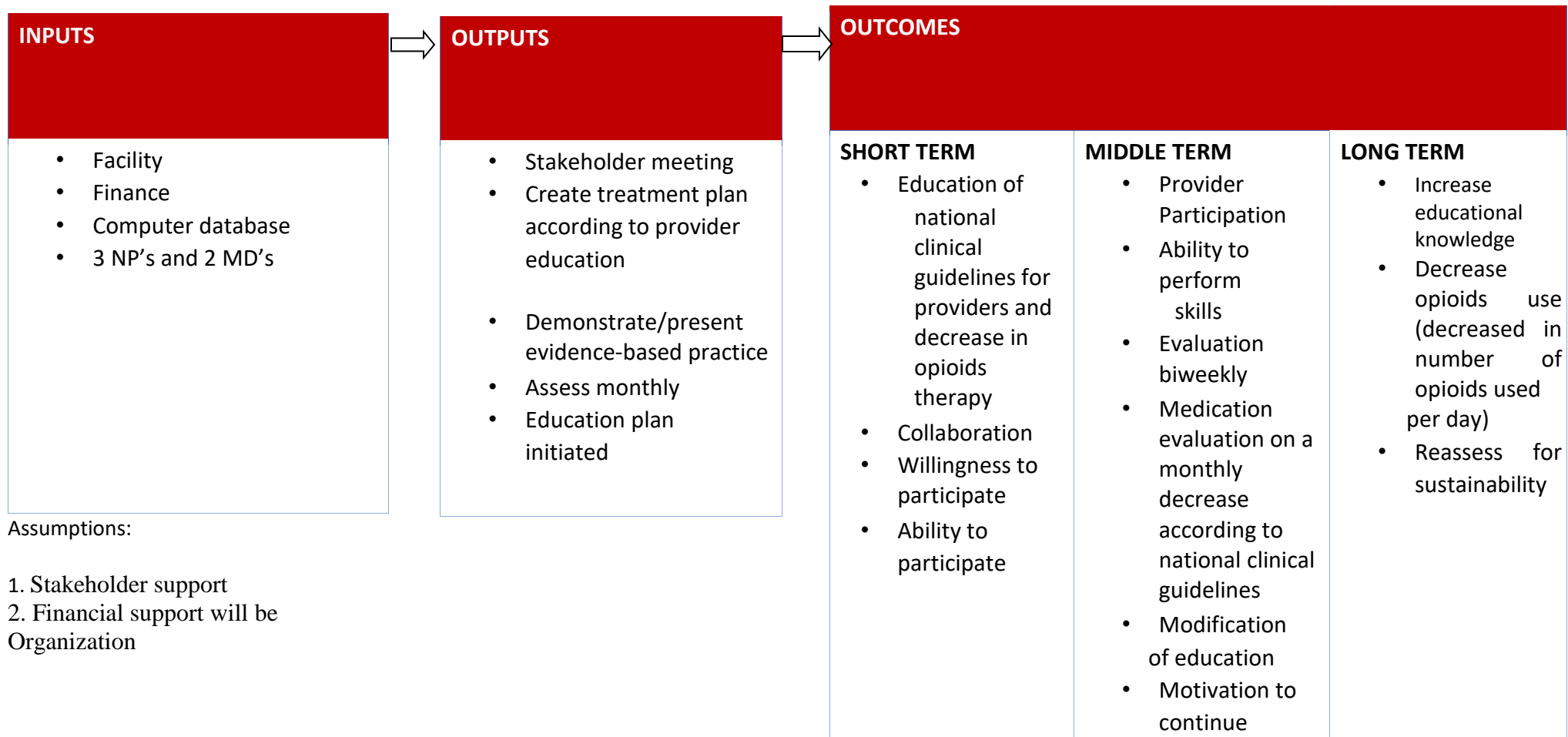


For NURS 6371
In the School of Nursing
The University of Texas at Tyler
By
Tonya Traylor



Appendix E: Iowa Model





Appendix F: Logic Model

Program Name: Provider education to help opioid reduction

Program goal: Increase provider education and decrease opioid use

1. Once all protocols are in place, the project will be executed according to evidence with the expectation of a good outcome
2. All providers will be offered official education on National Chronic Opioid Therapy Guidelines
3. National chronic opioid therapy guideline education for provider

Appendix G: Organizational Approval

10/23/17

Tonya Traylor
trtraylor@aol.com
137 Corley Circle
Wake Village, TX 75501
903-701-0296

Dear Tonya,

Thank you, Tonya, for seeking us out to conduct your DNP Scholarly Project (EPIP) entitled, Adding Physical Therapy to Decrease Opioid Use/Addiction, in our organization. We have reviewed your project proposal and are happy to partner with you as you implement your evidence-based change project. We realize that this project is part of your studies at the University of Texas at Tyler DNP Program. We also realize that the timeframe for the project is launching approximately the week of June 4th 2018 and concluding the week of August 13th 2018.

We believe that this is a valuable endeavor and support your project. We are looking forward to working with you.

Sincerely,

FNP-BC/Pm-C

THE UNIVERSITY OF TEXAS AT TYLER
COLLEGE OF NURSING AND HEALTH SCIENCES
SCHOOL OF NURSING - DOCTOR OF NURSING PRACTICE PROGRAM.
DNP MENTOR AGREEMENT

I have reviewed the mentor guidelines. I can provide the student with advanced experiences that meet the DNP Scholarly Project (EPIP) goals as agreed upon by the student, the faculty mentor, and me. I understand that there will be no remuneration for this service. I will facilitate and review the student's learning activities and will submit the required evaluations to the DNP Program.

I Steven Foltz agree to serve as a
(name of mentor)

mentor for the DNP student Tonya T Raylon
(name of student)

from June 2016 to May 2019
(beginning date of mentorship) (anticipated end of mentorship)

OR
I agree to mentor for the following semesters: All Semesters C]
OR

Specifically: Fall ☒ Spring ☒ Summer I
May UT TYLER disclose your contact information for future students seeking mentors? ☒ yes or no

 Date 10/1/16
Mentor Signature

For office use only:
Reviewed by _____ Date _____

Approved as a DNP mentor ☒ yes ☐ no
COLLEGE OF NURSING AND HEALTH SCIENCES

SCHOOL OF NURSING - DOCTOR OF NURSING PRACTICE PROGRAM
Mentor Biographical Data

Steven W. Foltz
Agency Healthcare Express
Position or Title: V.P. of Clinical Operations / FNP
Address: 3415 Richmond Road

(Please note that an updated resume or curriculum vitae may be submitted as an alternate to the completion of this section)
Name:
Current

Tonya Traylor 3/3/19 Final hours log
PROJECT HOURS & PROGRESSION LOG (PHP-LOG)

| DATES | ACTIVITY | HOW ACTIVITY RELATES TO /FACILITATES PROJECT or ACTUALIZATION OF DNP ROLE | HOURS First entry is total hours carried forward from MSN | HOURS ACCRUED TO DATE (1000 HOURS REQUIRED) | Progression Meeting Verification (initial here and share comments) |
|--------------|--|---|--|--|---|
| 8/2015 | Post-Masters FNP program at UTTYLER | Prepared for DNP program | 693 | 693 | TT |
| 9/3-9/9 | Meetings | Building stakeholder team | 8 | 701 | TT |
| 9/10-9/16 | Education meetings | Educate facility mentor and stakeholder team on need for change | 8 | 709 | TT |
| 9/17-9/23 | Meetings/shadowing | Stakeholder and department education | 8 | 717 | TT |
| 9/21 | One-day conference | Educate on new guidelines and protocols for opioid therapy | 8 | 725 | TT |
| 9/24-9/30 | Therapy treatment evaluation/shadowing | Education | 8 | 733 | TT |
| 10/1-10/7 | Evaluation of physical therapy equipment | Education for stakeholders on need for change | 8 | 741 | TT |
| 10/8-10/21 | Meetings | Meeting with facility mentor and FNP's | 8 | 749 | TT |
| 10/23 | Shadowing | Provider education | 8 | 757 | TT |
| 10/22-10/28 | Meeting | Educational meetings W/FNP's/advisor for guidelines and protocols | 8 | 765 | TT |
| 10/29-11/4 | Education meetings | Meetings on progression of EBP and theory models and how they will guide the project for the stakeholders/weekly update meeting | 8 | 773 | TT |
| 11/5-11/11 | Education meetings | Education on the best evidence /IT | 8 | 781 | TT |

| | | | | | |
|-------------|---------------------|---|---|-----|----|
| 10/29-11/4 | Education meetings | Meetings on progression of EBP and theory models and how they will guide the project for the stakeholders/weekly update meeting | 8 | 773 | TT |
| 11/5-11/11 | Education meetings | Education on the best evidence /IT | 8 | 781 | TT |
| 11/12-11/18 | Meetings | Weekly meetings with FNP's/Mentor On patient education | 8 | 789 | TT |
| 11/26-12/2 | Education Meetings | Meetings for stakeholders and the IT department for education | 8 | 797 | TT |
| 12/3-12/9 | Education meeting | Education on the evidence with stakeholders/IT training | 8 | 805 | TT |
| 12/10-12/16 | Meetings | Overview on evidence/protocol/ EBP and theory model to review plan for implementation | 8 | 813 | TT |
| 12/17-12/23 | Planning meetings | Meetings with stakeholders on the implementation plan | 8 | 821 | TT |
| 1/16-1/19 | Clinical meeting | Meeting with team over guidelines | 8 | 829 | TT |
| 1/22-1/26 | Stakeholder meeting | Stakeholder go over guidelines | 8 | 837 | TT |
| 1/29-2/2 | Mentor meetings | Check points | 8 | 845 | TT |
| 2/5-2/9 | Education meetings | National Chronic Opioid Therapy Guidelines | 8 | 853 | TT |
| 2/12-2/16 | Clinical meetings | Guidelines | 8 | 861 | TT |
| 2/19-2/23 | Clinical meetings | Guidelines | 8 | 869 | TT |
| 2/26-3/2 | Clinical meetings | Guidelines | 8 | 877 | TT |

| | | | | | |
|-----------|---------------------------------|--|---|-----|----|
| 3/5-3/9 | Clinical meetings | Database buildings | 8 | 885 | TT |
| 3/12-3/16 | Mentor meetings | Database buildings | 8 | 893 | TT |
| 3/19-3/23 | Team meetings | Database building | 8 | 901 | TT |
| 3/26-3/30 | Clinical meetings | Database building | 8 | 909 | TT |
| 4/2-4/6 | Clinical meetings | IT meetings to approve database building | 8 | 917 | TT |
| 4/9- | Clinical meetings | IT meeting approved database building Pre-test | 8 | 925 | TT |
| 4/16- | Clinical meetings | Provider education | 8 | 933 | TT |
| 4/23- | Clinical meetings | Provider education | 8 | 941 | TT |
| 4/30- | Clinical meetings | Provider education | 8 | 949 | TT |
| 5/7 | implementation | Provider education | 4 | 953 | TT |
| 5/14 | implementation | Provider education | 4 | 957 | TT |
| 5/21 | Implementation | Provider education | 4 | 961 | TT |
| 5/28 | Implementation | Provider education | 4 | 965 | TT |
| 6/4 | Implementation | Provider education | 4 | 969 | TT |
| 6/11 | Implementation | Provider education | 4 | 973 | TT |
| 6/18 | Implementation | Provider education | 4 | 977 | TT |
| 6/25 | implementation | Provider education | 4 | 981 | TT |
| 7/2 | implementation | Provider education/post-test | 4 | 985 | TT |
| 7/9 | implementation | Apply education to practice | 4 | 989 | TT |
| 8/27 | Data collection/mentor check-in | Apply education to practice | 8 | 997 | TT |

| | | | | | |
|------------|----------------------------|-----------------------------|---|------|----|
| 9/3 | Data collection | Apply education to practice | 8 | 1005 | TT |
| 9/10 | Data collection | Apply education to practice | 8 | 1013 | TT |
| 9/17 | Data collection | Apply education to practice | 8 | 1021 | TT |
| 9/24 | Data collection | Apply education to practice | 8 | 1029 | TT |
| 10/1 | Data collection | Apply education to practice | 8 | 1037 | TT |
| 10/8 | Data collection | Apply education to practice | 8 | 1045 | TT |
| 10/15 | Data collection | Apply education to practice | 8 | 1053 | TT |
| 10/22 | Summary | Apply education to practice | 8 | 1061 | TT |
| 10/29 | Summary | Apply education to practice | 8 | 1069 | TT |
| 11/5 | Summary/ mentor check in | Apply education to practice | 8 | 1077 | TT |
| 11/12 | Summary | Evaluation | 8 | 1085 | TT |
| 11/19 | Summary | Evaluation | 8 | 1093 | TT |
| 11/26 | Summary | Evaluation | 8 | 1101 | TT |
| 12/3 | Summary | Evaluation | 8 | 1109 | TT |
| 12/10 | Completion/mentor check-in | Wrap-up | 8 | 1117 | TT |
| 1/2-5/2019 | Plan for sustainability | Apply to facility | 8 | 1125 | TT |

| | | | | | |
|----------|--|--|----|------|----|
| 2/10-16 | Plan for sustainability/prepare for final presentation | Apply evidence of all 19 clinics/ work on final presentation | 16 | 1207 | TT |
| 2/17-23 | Plan for sustainability/prepare for final presentation | Apply evidence to all 19 clinics/work on final presentation/ health fair/mentor check in | 16 | 1223 | TT |
| 2/24-3/2 | Plan for sustainability/prepare for final presentation | Apply evidence to all 19 clinics/work on final presentation/ opioid conference/mentor check in | 16 | 1239 | TT |
| 3/3-9 | Plan for sustainability/prepare for final presentation | Apply evidence to all 19 clinics/Complete EPIP/ final presentation/mentor check in | 16 | 1255 | TT |