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Educational Intervention for Health Care Providers Prescribing Opioids for Individuals with Chronic Pain

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Capstone Proposal

Educational Intervention for Health Care Providers Prescribing Opioids for Individuals with
Chronic Pain

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Abstract

Background: Health care providers (HCP) are the primary caregivers for chronic pain in ambulatory care practice and are the predominant prescribers of opioids. Pain medication accounts for at least 11% of all prescriptions in ambulatory care yet research suggests the number could be as high as 20%. Given the current opioid epidemic, HCPs need guidelines to assist in treating chronic pain patients.

Methods: An educational intervention was implemented in a primary care practice to increase provider knowledge of chronic pain management and opioid prescribing utilizing a pre-survey, PowerPoint presentation, and post-knowledge survey.

Results: Seven providers attended the education intervention and completed the pre-test survey. Out of the seven providers, only four completed the final assessment. The KnowPain-12 survey was used to measure the knowledge, attitude, and practice (KAP) of health care providers. The KnowPain-12 survey score ranges from 0 to 60, with a higher score corresponding to a more correct response (Gordon et al., 2014). Amongst the four providers, the results were evenly split. Two of the four providers had a higher score following the intervention and two had lower scores. The scores following the intervention indicate that there was an increase in two of the providers' KAP. However, two providers decreased in KAP.

Conclusion: Further research into educational interventions and opioid prescribing needs to be done. The KAP Survey should be amended to include provider demographics, level of experience, and level of prior pain management education. Future studies should also have a larger sample size and include other types of healthcare professionals.

Keywords: chronic pain, chronic non-cancer pain, pain, primary care, and opioids

Opioid Prescribing for Chronic Pain in Primary Care

Introduction and Background

In 1995, the Food and Drug Administration (FDA) approved the use of the long-acting synthetic opioid medication Oxycontin to treat chronic and acute pain. Prior to this approval, the primary medication used for this purpose was Morphine Sulfate Continuous Release (MS Contin). MS Contin is an opiate-derived drug from the poppy plant. This was the first opioid medication produced that provided a 12-hour dosing schedule instead of every 4-6 hours (Food and Drug Administration [FDA], 2017). Based on the low rate of abuse of MS Contin, the FDA approved the synthetically produced opioid Oxycontin for pain management (FDA, 2017). The FDA (2017) based their approval on two assumptions: 1) the history of success with MS Contin, and 2) the euphoric phase associated with opioid abuse would diminish since sustained release medication has a slower absorption rate. What they did not anticipate was that “crushing the controlled-release capsule followed by oral ingestion or snorting would become widespread and lead to a high level of abuse” (FDA, 2017, para. 4).

Since the approval of Oxycontin, the opioid abuse has increased, which may be a direct result of health care providers overprescribing these types of medications (CDC, 2016a). The FDA has released many statements and initiatives trying to regain control the situation (FDA, 2017). In an effort to contain the overprescribing of opioids, the FDA launched the “Safe Use Initiative” in 2009 (FDA, 2015). Its goal was to “reduce preventable harm by identifying specific, preventable medication risks and developing, implementing and evaluating cross-sector interventions with partners who are committed to safe medication use” (FDA, 2015, para. 2). However, the data does not suggest that the initiative successfully stemmed overprescribing of pain medication (FDA, 2015). The CDC (2016a) states that since 1999 there has been a 300%

increase in prescribing opioids and, as a result, millions of people are abusing or dependent on these drugs

While opioid abuse became more widespread, lawsuits against pharmaceutical companies also increased. The suits alleged that pharmaceutical companies employed dishonest marketing practices around opioid use and the accompanying risk of addiction (Justice Department, 2007; Morrell, 2015). Purdue Pharma, the maker of Oxycontin, was fined \$600 million in 2007 for inadequately informing the public of the risk of addiction with the use of opioids (Department of Justice, 2007). The Justice Department (2007) “alleged that Purdue fraudulently misbranded Oxycontin as being less addictive and less subject to abuse and diversion than other pain medications” (para.15). Though Oxycontin serves a purpose in treating pain, it has risk implications that health care providers need to consider when treating patients. Additionally, providers need to be aware of the deceptive marketing practices that could potentially influence patient care and contribute to negative treatment outcomes.

As a result of increased opioid abuse, the CDC released a new guideline for chronic pain patients and opioid prescribing directed toward HCPs in March 2016 (CDC, 2016a). With so many issues surrounding increased opioid dependence and overdose deaths, the CDC recognized that guidelines for opioid prescribing for chronic pain needed to be refined. From a clinical perspective, the CDC's intervention comes at a time when HCPs are seeing more patients with chronic pain and are prescribing opioids at an increasing rate (CDC, 2016a). In 2010, the CDC estimated that 20% of patients seen at a doctor's office with chronic pain were prescribed opioids (Dowell, Haegerich, & Chou, 2016). Health care providers often express concerns that though they are the predominant opioid prescribers, they are also the least trained in chronic pain management and opioid prescribing practices (CDC, 2016a). Providers argue that the high risk

of opioid addiction in chronic pain patients in primary care – as indicated by an increase in prescription sales, abuse, dependency, and overdoses – results from the lack of clear guidelines and pain management education for primary care providers (Dobscha, Corson, Flores, Tansill, & Gerrity, 2008; Fink-Miller, Long, & Gross, 2014).

Problem Statement

The potentiality of inappropriate use of opioids to treat chronic pain is increasing, particularly for family practice, general practice, and internal medicine (CDC, 2016a). The CDC (2016a) states that opioid prescriptions increased 7.3% from 2007 to 2012 for these specialties. Lack of education and clear guidelines for HCPs in chronic pain management are cited as contributors to the problem (Dobscha, Corson, Flores, Tansill, & Gerrity, 2008; Fink-Miller, Long, & Gross, 2014; McCrorie et al., 2015). Educating HCPs in chronic pain as it relates to the CDC's chronic pain guideline is a first step toward addressing inappropriate prescribing practices.

Review of Literature

Current Guideline

A literature review of primary care prescribing practices on chronic pain patients was conducted. In researching the topic, a search of the literature was undertaken using the Current Index to Nursing and Allied Health Literature library (CINAHL) and the PubMed database. The search terms used were based on a combination of keywords: chronic pain, chronic non-cancer pain, pain, primary care, and opioids and yielded over 209 articles. The results were refined to include only articles published from 2008 to 2015, full-text articles, and those published in academic journals. The results were hand-filtered to eliminate articles that were based on opinion, articles that were poorly defined, or articles with inconsistent results. They were further

refined to articles that centered on the treatment of chronic pain in primary care. Six articles were selected and rated for strength of evidence and quality using the John Hopkins research evidence appraisal (Newhouse, Dearholt, Poe, Pugh, White, 2005). Please see Appendix A for the review matrix.

In September 2015, the CDC started to review guidelines for opioid prescribing for chronic pain developed by professional groups and agencies for general practitioners (Federal Register, 2015). They reviewed the selected guidelines and coded them into common categories (CDC, 2016b). The material collected by the CDC shows that though there are similarities across guidelines, most guidelines vary in their specific recommendations, evidence, and risks (Dowell, Haegerich, & Chou, 2016). Furthermore, the CDC's review showed that the current guidelines are not meeting the needs of practitioners (CDC, 2016b). Simply stated, practitioners need clearer, easier to follow, evidence-based guidelines that reflect to direct treatment plans in chronic pain patients.

Given the complexities in chronic pain management, providers depend on guidelines to manage treatment of chronic pain patients. There are several chronic pain guidelines available for providers. However, there are disparities in the recommendations and in the level of evidence the guidelines rely on (CDC, 2016a). The latest guideline developed by the CDC (2016a) entitled "CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016" attempts to address these issues. The new CDC guideline has 12 recommendations for chronic pain treatment in primary care. The recommendations fall under 3 main themes: 1) when to initiate or continue opioids; 2) opioid selection, dosage, duration, follow-up, and discontinuation; and 3) addressing risks and harms of opioid use (CDC, 2016a). This is the "first time that guidance has been provided at the federal level to clinicians on prescription opioids for

chronic pain outside of active cancer or palliative care” (Olsen, 2016, para.10). Given that providers rely on guidelines to help manage patient care, this is an important first step.

Pain management is complex to manage and is challenging in primary care where providers feel they are inadequately prepared in this area (Fink-Miller, Long, & Gross, 2014). A study done by Bergman, Matthias, Coffing, & Krebs (2013) studied the interactions between chronic pain patients and their providers. The goal of this qualitative study was to understand specifically the challenges that both providers and patients face as part of the chronic pain experience. Interviews were conducted with both the patients and the providers. The tensions each side felt as part of the patient-provider relationship were a common theme for both providers and patients. Patients felt frustrated with perceived feelings of mistrust from providers. Providers struggled with the complexity of patient care with opioid prescribing and concerns around causing inadvertent addiction as a result of care. This study illuminates the complexity of the provider-patient relationship and chronic pain management. Having a clear chronic pain guideline does not eliminate every complexity of managing chronic pain patients, but it does alleviate some stressors.

Current Research

A common concern amongst HCPs is the lack of education in opioid use for both the chronic pain patient and the prescriber. McCrorie et al. (2015) reviewed the use of opioids in chronic pain treatment in primary care and the attitudes of both the patient and the prescriber around pain management. They focused specifically on expertise of providers in pain management and provider knowledge of the reasons that cause patients to seek treatment. In this study, 15 general practitioners and 23 patients from the UK were interviewed. The patients that were selected were current long-term prescription opioid users. McCrorie et al.

(2015) concluded that problems arose where the patient expected to treat their pain through opioid therapy and where, as a result, prescribers were pressured into feeling that they could not explore alternatives to opioid treatment. As a result, opioids were prescribed and alternative therapies were not explored as a part of care.

Dobscha et al. (2008) performed a cross-sectional study with 45 Veteran Affairs (VA) clinicians from five primary care clinics of a VA medical center. The study's purpose was to gauge HCP's perceptions around their efficacy to treat chronic pain. Like the outcome of the McCrorie et al. (2015) study, the practitioners in the Dobscha et al. (2008) study felt neither "moderately [nor] strongly confident" in their ability to treat a patient with a chronic pain diagnosis. Physicians expressed concerns that they lacked training and were wary of causing opioid addiction through their prescribing practices.

If education is the primary driver for better prescribing practices, providers need to utilize evidence-based practices (EBP) or educational interventions, which increase positive outcomes in pain management care (Anderson, Wang & Zlateva, 2012). Several studies used different models or types of education with positive results. Anderson et al. (2012) did a qualitative research study with 12 primary care health centers. They used the Promoting Action on Research Implementation in Health Services (PARIHS) framework to do a comprehensive assessment of pain care in primary care settings. "The PARIHS is a framework that defines context, evidence and facilitation as the three key interacting elements determining success of an implementation" (Anderson et al, 2012, p.453). The goal of the study was to use the results to design a future quality improvement initiative. They found that providers' adherence to standards in pain management varied. They attributed this to varying levels of pain care knowledge and lack of confidence in relation to pain management care (Anderson et al, 2012).

Evidence for the efficacy of an education intervention is also found in the observational study done by Canada, DiRocco, and Day (2014). The study evaluated the link between training received by providers on protocols for monitoring the care of chronic pain patients and outcomes in actual opioid prescribing. Once HCPs were trained, researchers performed a pre- and post-survey which indicated an increase in knowledge around pain management practices and improved adherence to best practice guidelines. Similarly, Kavukcu et al. (2015) conducted a cross-sectional study with 36 family physicians and performed a survey measuring the effectiveness of using the patient risk assessment. The risk assessment tests the patient's knowledge of pain treatment and social requirements involved in a treatment plan. When re-surveyed after 6 months, 61% of the providers agreed that the risk assessment increased their knowledge of patient risk. These findings suggest that a provider should perform a risk evaluation before prescribing opioids.

Studies reveal that primary care providers lack education in opioid prescribing and pain management treatment for chronic pain patients (Dobscha et al., 2008; Fink-Miller, Long, & Gross, 2014; McCrorie et al., 2015). Research also indicates that educational interventions make a difference in prescribing practices and can ensure better patient care (Anderson et al., 2012; Dobscha et al., 2008; Fink-Miller et al., 2014; McCrorie et al., 2015). The studies reviewed utilized different forms of interventions, which indicates that education—regardless of the model used—does raise the quality of prescribing practices. However, it also highlights the need for consistent levels of education for providers.

Theoretical Framework

Treating chronic pain patients requires that HCPs are educated in pain management modalities. This involves having basic knowledge around chronic pain management and

prescribing practices. Changing one's practices can be difficult, but it is almost impossible if there isn't a clear process toward change or if there are knowledge gaps. For the purpose of this project, Lewin's Change Theory (1951) will be the theoretical framework used to implement an educational intervention to address provider knowledge deficits. Lewin's theory advocates for "controlled change" where change is proactive and inevitable. Lewin developed the concepts of force and field, which are fundamental to the theory. Force is defined as the direction the entity is going. The direction can be toward change or away from it. The field is the system or entity that is changing (Lewin, 1951). In the current project, the system changing is a healthcare organization.

Lewin's theory is predicated on three steps: unfreeze, change, and freeze (Lewin, 1951). The unfreeze step is where the organization prepares for change. In this phase, managers determine if an organization is open to the change or if it is against it. This is also the stage where the focus is on raising awareness of a particular problem in an organization and getting others to recognize that the proposed change is needed. In the case of opioid prescribing, the healthcare organization must become aware that the existing knowledge deficit potentially causes its providers to inappropriately prescribe opioids to chronic pain patients. At this stage, forces work either against the proposed change or push it forward. Once the idea of change has been accepted, the second stage which Lewin calls "change" commences. In this project, the "change" step refers to when providers are educated in treating chronic pain patients and in opioid prescribing. According to Lewin's model, most have accepted the proposed change at this point, yet fully absorbing the change into the culture or identity of the organization may still require a transition period before it is fully complete (Lewin, 1951). In the final step called "freezing", the change becomes a rote process in the organization (Lewin, 1951).

Project Design

This project was an education intervention project. The proposal was to provide education to prescribers to increase chronic pain management knowledge and decrease inappropriate prescribing to adult patients. The DNP student used a pretest knowledge survey called Knowpain -12 (2014) with an additional question added regarding the number of opioids prescribed during a week to test chronic pain knowledge and prescribing practices (See Table 1). This was completed prior to an educational session on chronic pain and opioid prescribing based on the latest guideline released by the CDC (2016a). Once the educational intervention was completed, a post-test using the Knowpain – 12 chronic pain survey was given. This was taken by participating providers four weeks after the educational session to determine if chronic pain knowledge had increased and if a change in prescribing practice had occurred.

Goal, Objectives, and Expected Outcomes

Goal. The goal of this intervention was to increase healthcare provider knowledge around chronic pain management and opioid prescribing to adult patients.

Objectives. The primary objective was to implement a chronic pain educational program for health care providers using a PowerPoint presentation and to assess whether or not the presentation increased provider knowledge and treatment of chronic pain using the Knowpain – 12 post-test survey.

Expected Outcomes. For this project, the expected outcome was an increase in chronic pain treatment knowledge and a decrease in opioid prescribing. The expectations were to have: a) 75% of the staff respond to the chronic pain pre-test survey, b) an increase in knowledge which would be reflected by the quantitative measures in the pre- and post-survey test, and c) at least 75% of the staff score higher in the chronic pain post-survey.

Project Methods

Setting and Participants

This project was done at a healthcare organization located in Massachusetts. The healthcare organization provides advanced practice services to health facilities and home care for adult patients. It also offers primary care services on both an outpatient and inpatient basis. The age of their patient population is 60 years and older. The practice consists of fifteen nurse practitioners, four support staff and two collaborating physicians. Respondents were all advanced practice registered nurses. The practice owner and the DNP student invited all the practitioners to the bi-monthly meeting. However, the nurse practitioners in this healthcare organization all work in various locations throughout Massachusetts. Because of this, attendance at the bi-monthly meetings is normally sporadic and often low. The leadership for the project consisted of the practice owner. She was also a participant and one of the seven nurse practitioners to take the survey and receive the educational intervention. Although the DNP student sent out invitations to fifteen providers, only seven filled out the pre-survey and attended the educational intervention.

Measuring Knowledge Outcome

The methodology for this project consisted of a pre and post knowledge survey to providers. The survey tests provider knowledge about chronic pain. Once the pre-survey was completed, a 60-minute chronic pain presentation was given to the healthcare group, after which a post-survey was administered. The presentation was interactive and held over lunch. The post survey was given four weeks after the educational intervention. It assessed the impact of the education intervention by gauging each provider's level of pain knowledge management before and after it.

Data Collection

For this project, knowledge was measured through the use of a pre-post survey called the KnowPain-12 tool. The survey measures healthcare provider knowledge, attitude, and practice (KAP) as it relates to the level of understanding in pain education in caring for chronic pain patients (Gordon, Loeser, Tauben, Rue, Stogicza, & Doorenbos, 2014). The KnowPain-12 survey is based on a 50-item survey called the KnowPain-50 survey (Harris et al., 2008). The original 50-question survey was developed to assess pain management education in physicians. The results of the original survey were shown to have “good psychometric properties.” KnowPain-50 “correlates with clinical behaviors and appears to distinguish between physicians with different levels of pain management expertise” (Harris et al., 2008). The survey measures knowledge in the following six areas: 1) Initial pain assessment; 2) definition of treatment goals and expectations; 3) development of a treatment plan; (4) implementation of a treatment plan; (5) reassessment and management of longitudinal care; and (6) management of environmental issues. The test uses a 6-category Likert scale that ranges from strongly agree, agree, and somewhat agree to somewhat disagree, disagree, and strongly disagree (Harris et al., 2008). The Knowpain-12 tool was created to assess the same areas of interest as the original survey, yet was developed to administer to a broader group of healthcare professionals. It was used to assess registered nurses, physicians, advanced practice registered nurses, other allied health professionals, and students. The survey consists of 12 questions (Table 1) and was designed to be brief so clinicians would be willing to complete the survey following continuing education programs (Gordon et al., 2014). Part of the test features eight items with agreement and four with disagreement as correct responses. For scoring, the most extreme correct response was assigned 5 points and the most extreme incorrect response 0 points for a potential total scoring

range of 0 to 60. A high-test score corresponds to more correct responses (Gordon et al., 2014).

Wolters Kluwer Health Inc. has been granted permission to use this tool (See Appendix B).

Table 1. The KnowPain-12 tool

| |
|---|
| 1. When I see consistently high scores on pain rating scales in the face of minimal or moderate pathology, this means that the patient is exaggerating his/her pain. |
| 2. In chronic pain, the assessment should include measurement of the pain intensity, emotional distress, and functional status. |
| 3. There is good evidence that psychosocial factors predict outcomes from back surgery better than the patient's physical characteristics. |
| 4. Early return to activities is one of my primary goals when treating a patient with recent onset back pain. |
| 5. Antidepressants usually do not improve symptoms and function in chronic pain patients. |
| 6. Cognitive behavioral therapy is very effective in chronic pain management and should be applied as early as possible in the treatment plan for most chronic pain patients. |
| 7. I feel comfortable calculating conversion doses of commonly used opioids. |
| 8. Long-term use of NSAIDs in the management of chronic pain has higher risk for tissue damage, morbidity, and mortality than long-term use of opioids. |
| 9. There is good medical evidence that interdisciplinary treatment of back pain is effective in |

reducing disability, pain levels, and in returning patients to work.

10. I believe that chronic pain of unknown cause should not be treated with opioids even if this is the only way to obtain pain relief.

11. Under federal regulations, it is not lawful to prescribe an opioid to treat pain in a patient with a diagnosed substance use disorder.

12. I know how to obtain information about both state and federal requirements for prescribing opioids.

In addition to the KnowPain-12 survey questions, one more survey question was asked to measure current opioid prescribing practices. The KnowPain-12 survey was administered using the online questionnaire service Survey Monkey and was also given to respondents who hadn't used Survey Monkey prior to the educational intervention. The pre-post survey results were matched based on email address.

1. Estimate the total number of opioid analgesics prescriptions prescribed to patients per week:

0-20

21-40

40 -60

61-80

81-100

| |
|------|
| >100 |
|------|

Ethics and Human Subjects Protection

This project was an education initiative that did not involve patient contact. The training involved health care providers participating in a pre- and post-survey on pain management and an educational intervention consisting of a PowerPoint presentation given by the DNP student. The survey did require an email address so that results of the pre and posttest could be matched for analysis purposes. However, it did not capture any provider demographics. The information gathered was kept confidential as part of the Survey Monkey software or locked in a filing cabinet in the DNP student's home. The results consisted of quantitative measures as part of the survey. Health Insurance Portability and Accountability Act did not apply since there was no patient contact or patient data used. See Appendix C for approved IRB form.

Implementation Plan

The educational intervention provided information to prescribers to increase pain management knowledge and decrease opioid prescribing to adult patients. In order to implement this project, the DNP student took the following steps:

1. The goal of the intervention was to increase healthcare provider knowledge around chronic pain and opioid prescribing to adult patients using the CDC (2016a) guideline titled “CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016.”
 - a. The DNP student received acceptance from the publisher to use the KnowPain -12 survey
 - b. The IRB was reviewed and approved.

- c. The DNP student gained agreement from the practice owner of a large NP practice in Massachusetts. The management sent a memo to the team stating the current problem and setting expectations.
 - d. The DNP student was invited to a staff meeting with the practice in September 2016. This meeting was for the DNP student to discuss the intervention and define the dates.
 - e. The memo was sent to the practice and synthesized the project with the expected dates.
 2. The student provided a 60-minute interactive chronic pain management educational PowerPoint to the healthcare practice in January 2017. The PowerPoint presentation covered prescribing for chronic pain conditions as the CDC (2016a) defines it.
 - a. The DNP student administered the pre-survey before any educational intervention. This was done through Survey Monkey and for those who didn't respond to the electronic Survey Monkey, a paper version was completed before the educational intervention.
 - b. The DNP student administered the post-survey four weeks following the intervention.
3. Analysis of the pre- and post-surveys and data concluded.
 - a. Data was analyzed to determine if the intervention was successful. Success in this case would mean the post survey would indicate increased provider knowledge in chronic pain management and opioid prescribing.

4. The final step was to finalize the chronic pain instructional materials the practice would use. This consisted of preparing educational materials for the provider based on discussion in the educational session.

Project Time-Line

The project timeline started in September 2016 and finished in April 2017. The tasks and dates are detailed in Table 2.

Table 2.
Project Time-
line

| Task | Date |
|--|-------------|
| Stake Holder Support | 15-Sep |
| Approval for KnowPain-12 Survey | 15-Sep |
| IRB Human Subject Form Approval | 30-Sep |
| Capstone Proposal Approved | 30-Sep |
| Project Explanation Email Sent to Practice | 30-Oct |
| Pre-Survey Given | 21-Dec |
| Educational Materials Finalized | 28-Dec |
| Education intervention | 10-Jan |
| Educational Forms Provided to Practice | 15-Jan |
| Post Survey Given | 10-Feb |
| Data collected & Analyzed | 28-Feb |
| Write Up of Results & Final Approval | 18-Mar |

Budget

The cost for this project consisted of a one-time purchase of printed materials and lunch for the educational session (Table 3). The DNP student paid for the costs of the project. Once the initiative was completed there were no other costs for the DNP student.

| Table 3. Budget Details | | |
|--|------------------------------------|-------------|
| Project Line Item | Details | Cost |
| Cost of using the Know Pain - 12 survey | Knowpain -12 cost is \$3.16 x50 | 158 |

| | | |
|----------------------------|---------------------------------------|------------|
| Educational Lunch Session | Educational teaching session \$10 x25 | 250 |
| Total Implementation Costs | | 408 |

Results

A pre-post intervention survey was used to test chronic pain knowledge of the providers. The KnowPain-12 Management survey and a one-question survey on the number of opioids prescribed in a week were used with seven participants. Out of the seven nurse practitioners, only four completed the post survey. The KnowPain-12 survey score ranges from 0 to 60, with a higher score corresponding to more correct responses (Gordon et al., 2014). The four providers that completed both the pre-post intervention survey were evenly split on total scores. Two of the four providers had a higher score post-intervention and two had lower scores. The four providers had the following scores: Provider one had a pre-intervention score of 36 and post-intervention of 52; Provider two had a pre-intervention score of 51 and post-intervention of 54; Provider three had a pre-intervention score of 49 and post-intervention of 44; and Provider four had a pre-intervention score of 42 and post-intervention of 39 (See Appendix D). The scores indicate that there was an increase in two of the provider's knowledge, attitude, and practice. However, two providers decreased in knowledge, attitude, and practice.

Facilitators

A key facilitator for this educational intervention is the current public focus on the drug epidemic at both the federal and state level. From a regional perspective, Massachusetts was the first state in the nation that passed a new law in March 2016 that limits opioid prescription to a 7-day supply for first-time adult prescriptions (Massachusetts Medical Society, 2016). On October 15, 2016, the state also passed a prescription-monitoring program that requires practitioners to be

registered and verify any controlled substance or narcotic drug (“Massachusetts Prescription”, n.d.). The other facilitator was the focus on the role that HCPs play in contributing to the problem of opioid dependence. The CDC (2016a) states, “Opioid prescriptions per capita increased 7.3% from 2007 to 2012, with opioid prescribing rates increasing more for family practice, general practice, and internal medicine compared with other specialties” (para. 2). Because of these statistics and public awareness, the participants acknowledged the importance of being responsible prescribers.

The changes to the current prescribing laws may have an impact on prescribing behaviors. Prior to these changes, it was difficult to track providers who were not prescribing safely. The additional question added to the KnowPain-12 survey for this study asked providers to quantify opioid prescribing practices. Table 4 illustrates that providers prescribing 0-20 prescriptions in a week continued to prescribe at that frequency both pre- and post-intervention (See Appendix D). However, for the one provider prescribing over 100 prescriptions in a week there was a change noted in prescribing practice. Recent changes to the law, public awareness, and education may help decrease opioid prescribing in the future.

| Table 4. Results | | | |
|---|----------|----------------------|----------------------|
| Question 13 | Options | Pre - Test Frequency | Post -Test Frequency |
| Estimate the total number of opioid analgesics prescriptions prescribed to patients per week: | 0 - 20 | 3 | 3 |
| | 21 - 40 | | |
| | 41 - 60 | | |
| | 61 - 80 | | |
| | 81 - 100 | | 1 |
| | >100 | 1 | |

Barriers

Primary barriers were resistance to change, competing priorities, and time constraints.

As part of this project, the first step towards engaging stakeholders was to ensure that the providers were part of the change process and that everyone understood the problem (White & Dudley-Brown, 2012). The chronic pain problem was explained at a staff meeting three months prior to the educational session. Furthermore, two emails on this topic were also sent to the practice. The educational intervention started with the CDC (2016a) key statistics charts and graphs showing the increase in opioid prescribing, the increase in addiction, and the increase in suicide rates (See Appendix E). This provoked discussion amongst the providers in attendance concerning the complexity of chronic pain management. The general consensus in the room was that chronic pain is difficult to treat and providers are doing the best they can with the tools that they have.

The second barrier was competing priorities. The nurse practitioners have large patient caseloads and limited time, so the balance between caring for patients as they have in the past and changing one's practice is inevitably skewed towards doing what has worked in the past. Adding more forms for patients to fill out, as part of chronic pain management was not enthusiastically received. Nevertheless, after some discussion, they all agreed that along with depression screening forms, the three item PEG scale form that assesses pain and function (See Appendix E) and the CDC Checklist for prescribing opioids for chronic pain were helpful tools (CDC, n.d.) (See Appendix F). These are quick forms that can be used to treat chronic pain patients and are suggested as part of the new CDC guideline.

The educational session allowed for a lot of information to be shared but limited some of the discussion and, as a result, the involvement of the providers in the change process. Lewin's Change Theory states that this is critical to gaining acceptance to change (White & Dudley-Brown, 2012). To address the time constraints, future sessions could be scheduled to allow for

more discussion time.

Discussion and Interpretation

The project had several limitations. In addition to the small sample size, the survey used to measure chronic pain knowledge does not take into account providers' level of formal pain management education or their level of experience (Gordon et al., 2014). Data was collected with the assumption that the providers have similar levels of both pain management education and experience. The DNP student did not design the intervention with these attributes incorporated as part of the pre-post survey. This may account for the even split of the two providers that went up in knowledge versus the two that went down. Further studies could not only increase the number of participants but also change the survey design. Understanding the level of pain management education and years of professional practice is important because that information impacts survey responses and, furthermore, how results are interpreted. The NIH states because there isn't enough evidence for providers to use in clinical decision-making, they may have to rely solely on their clinical experience ("Pathways to Prevention Workshop", 2014). This indicates that clinical experience may have a large impact on how a provider treats chronic pain. Additionally, understanding the level of chronic pain education would also help. The Knowpain -12 (2014) study results showed practitioners who identified as pain specialists had higher overall scores than everyone else. Being able to understand the provider's level of experience and level of pain management education would help strengthen the survey design.

Pain management is complex and requires specialized education (Dobscha, Corson, Flores, Tansill, & Gerrity, 2008; Fink-Miller, Long, & Gross, 2014; McCrorie et al., 2015). This was a common finding in the DNP student's literature review. The goal of the intervention was to educate providers on chronic pain management according to the latest CDC Guideline

released in March 2016. The educational session generated a lot of discussion around the importance of the topic. However, at the same time, some of the providers also discussed the importance of treating patients with opioids regardless of the new guideline. While the results of the pre- and post-survey cannot be generalized to practice, the overall feedback from the providers on the educational session was positive. The general consensus was that the training was helpful.

During the follow-up discussion, several of the providers commented that they feel that pain management training should also be combined with training related to complex care - particularly regarding chronic pain and depression. Many of the providers, including the practice owner, had patients that are treated simultaneously for both conditions. The providers in the practice frequently prescribe anti-depressants as part of treatment. The prevalence of patients having both pain and depression is high and is related with the diagnosis of persistent mild depression or depression caused by physical issues (Agüera-Ortiz, Failde, Mico, Cervilla, & López-Ibor, 2011). This indicates that chronic pain is complex and requires a multi-modal pharmacological strategy for therapy. Additionally, recent studies indicate that antidepressants may act as anti-inflammatory agents and modulate the immune/cytokine process, thus reinforcing the use of other pharmacological therapies for the treatment of chronic pain (Jain, & Jain, 2011).

Conclusion

Recognizing that the United States is facing an opioid epidemic and that providers are contributing to the problem is a step towards finding a solution. This project endeavored to provide education to providers to help treat patients with chronic pain and decrease inappropriate

prescribing of opioids. From an EBP perspective, the results of the intervention need further research into educational interventions and opioid prescribing.

Chronic pain is one of the most complex health issues that providers treat. In many instances, chronic pain is related to other co-morbidities, which adds complexity to the treatment process. Without proper training and clear guidelines a difficult problem is made harder. In many instances, providers leave formal education with limited or no pain management guidance and, until recently, there wasn't a clear guideline to follow. Going forward, these are both areas that will continue to require focus and refinement. One way to ensure a basic level of provider training would be to mandate continuing education units as part of maintaining professional licensure. Continuing education units in chronic pain management could be addressed as part of this process. Another area that could potentially help address this issue is to have more collaborative care in relation to treating chronic pain. In their study, Anderson et al. (2016) advocated for using the Stepped Care Model for Pain Management (SCM-PM). This involves three steps: the primary care provider develops a treatment plan with the patient, they construct a multidisciplinary collaborative plan, and providers identify patients that require more care. Collaboration is a way for providers to learn and support each other as part of providing complex care.

Dissemination

This capstone project will be presented at the University of Massachusetts Amherst as part of the school's Scholar Day. In addition to Scholar Day, the project results will be shared with the practice. In the long term, there has been some discussion with a sub acute rehabilitation center about implementing an educational intervention with registered nurses at that facility. Though registered nurses are not prescribers, they are part of the care team and are

advocates for patients. Education in chronic pain management and opioid prescribing will help guide safe prescribing practices and help strengthen collaboration amongst health-care staff in chronic pain management.

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Appendix A

Evidence Table

| Citation | Design | Sample and location research/study was performed | Outcomes/Results of the intervention and/or objectives of the study | Evidence / Grade Level |
|--|---|--|---|------------------------|
| Anderson, D., Wang, S., & Zlateva, I. (2012). Comprehensive assessment of chronic pain management in primary care: a first phase of a quality improvement initiative at a multisite Community Health Center. <i>Quality In Primary Care</i> , 20(6), 421-433 13p. | Qualitative Research using the Promoting Action on Research Implementation in Health Services (PARIHS) Framework | Used VA patients, the 'pain score cohort' in this study were chosen according to the following set of criteria: (a) age > 18 years; and (b) two or more pain scores of 4 or greater (moderate to severe pain) separated by 90 days or more during the measurement timeframe. | Found that patients with chronic pain had extremely high primary care utilisation rates while referral rates to pain-related specialties werelow for these patients. | III - C |
| Canada, R. E., DiRocco, D., & Day, S. (2014). A better approach to opioid prescribing in primary care. <i>Journal Of Family Practice</i> , 63(6), E1-8 1p. | Qualitative Research | Trained providers and select staff from 3 primary care practices in the use of a protocol for managing patients taking opioids for cnep. Done at the Univ, of Penn. | There was a statistically significant improvement in providers' role adequacy, role support, and job satisfaction/role-related self-esteem when working with patients taking opioids. in addition, provider knowledge of proper management of these patients improved significantly | III - C |
| Dobscha, S., Corson, K., Flores, J., Tansill, E., & Gerrity, M. (2008). Veterans affairs primary care clinicians' attitudes toward chronic pain and correlates of opioid prescribing rates. <i>Pain Medicine</i> , 9(5), 564-571 8p. | Cross-sectional study of clinician survey and pharmacy data.Forty-five VA clinicians from five primary care clinics of one VA medical center. | The primary objective of this study was to identify veterans affairs (VA) primary care clinicians' attitudes regarding chronic pain treatment. A secondary objective was to explore relationships between clinician and practice characteristics and an objective measure of opioid prescribing rates. | Seventy-one percent of clinicians felt moderately or strongly confident in their ability to treat chronic pain, and 77% moderately or strongly agreed that skilled pain management is a high priority. However, 73% moderately or strongly agreed that patients with chronic pain are a major source of frustration and 38% reported moderate or greater dissatisfaction with their ability to provide optimal pain treatment. Fifty-two percent moderately or strongly agreed that their management is influenced by previous experiences with patients addicted to drugs. The mean PCPO was 16.5% (SD = 6.7). In bivariate comparisons, clinician panel size, job and resource satisfaction, and professional training were associated with opioid prescribing rates. | IIA - B |
| Fink-Miller, E. L., Long, D. M., & Gross, R. T. (2014). Comparing Chronic Pain Treatment Seekers in Primary Care versus Tertiary Care Settings. <i>Journal Of The American Board Of Family Medicine</i> , 27(5), 594-601 8p. doi:10.3122/jabfm.2014.05.130311 | Qualitative Research | This study sought to determine whether patients with chronic pain in primary care reported less pain, fewer psychological variables related to pain, and lower risk of medication misuse/abuse compared with those in tertiary care. | Findings suggest that primary care patients with chronic pain were similar to those in tertiary care on a host of indices and reported more severe pain. There were no significant group differences for risk of medication misuse or abuse. | III -C |
| Kavukcu, E., Akdeniz, M., Avci, H. H., Altug, M., Öner, M., & Altuğ, M. (2015). Chronic noncancer pain management in primary care: family medicine physicians' risk assessment of opioid misuse. <i>Postgraduate Medicine</i> , 127(1), 22-26 5p. doi:10.1080/00325481.2015.993572 | Cross-sectional study comprised 36 family physicians | The aim of this study is to make a favorable change in PCFPs' knowledge, attitudes, and practices about opioid use in CNCP via education on assessment of the risk of opioid misuse. | About 61.1% of family physicians reported concern and hesitation in prescribing opioids due to known risks, such as overdose, addiction, dependence, or diversion, and agreed that family physicians should apply risk assessment before opioid use in CNCP | IIA - B |
| Understanding long-term opioid prescribing for non-cancer pain in primary care: a qualitative study. (2015). <i>BMC Family Practice</i> , 16(1), 1-9 9p. doi:10.1186/s12875-015-0335-5 | Qualitative Research | Interviews with patients and focus groups with general practitioners (GPs). Participants included 23 patients currently prescribed long-term opioids and 15 GPs from Leeds and Bradford, United Kingdom (UK) | Problematic prescribing occurs when patients experience repeated consultations that do not meet their needs and GPs feel unable to negotiate alternative approaches to treatment. | III -C |

Appendix B

Approval to Use Knowpain – 12 Survey

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Sep 20, 2016

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| License date | Aug 08, 2016 |
| Licensed Content Publisher | Wolters Kluwer Health, Inc. |
| Licensed Content Publication | Clinical Journal of Pain, The |
| Licensed Content Title | Development of the KnowPain-12 Pain Management Knowledge Survey. |
| Licensed Content Author | Gordon, Debra; RN-BC, DNP; ACNS-BC, FAAN; Loeser, John; Tauben, David; Rue, Tessa; Stogicza, Agnes; Doorenbos, Ardith; RN, PhD |
| Licensed Content Date | Jun 1, 2014 |
| Licensed Content Volume Number | 30 |
| Licensed Content Issue Number | 6 |
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| Requestor type | Academic/Educational |
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| Format | Electronic |
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United States
Attn: Sonya L Lachance

Appendix C

Human Research Protection Approval



University of Massachusetts Amherst
108 Research Administration Building
70 Butterfield Terrace
Amherst, MA 01003-9242

**Human Research Protection Office
Research Affairs**

Telephone: 545-3428 FAX: 577-1728
FAX: 577-1728

MEMORANDUM

To: Sonya LaChance, College of Nursing
From: Human Research Protection Office
Date: October 4, 2016

Project Title: *Educational Intervention for Health Care Providers Prescribing Opioids for Individuals with Chronic Pain*

IRB Number: 16-113

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination:

- The activity does not involve research that obtains information about living individuals and therefore does NOT require IRB review and approval.
- The activity does not involve intervention or interaction with individuals OR does not use identifiable private information and therefore does NOT require IRB review and approval.
- The activity is not considered research under the human subject regulations (Research is defined as "a systematic investigation designed to develop or contribute to generalizable knowledge.") and therefore does NOT require IRB review and approval.
- The activity is determined to meet the definition of human subject research under federal regulations and therefore DOES require submission of applicable materials for IRB review.

For activities requiring review, please see our web pages for more on [types of review](#) or [submitting a new protocol](#). For assistance do not hesitate to contact the Human Research Protection Office at 545-3428 for assistance.

Appendix D

Survey Result

| LEGEND:  Strong disagreement is the correct response  Strong agreement is the correct response | | Pre-Intervention | Post -intervention |
|--|-----------------------|------------------|--------------------|
| | | Frequency (n) | Frequency (n) |
| | | 4 | 4 |
| Q1. When I see consistently high scores on pain rating scales in the face of minimal or moderate pathology, this means that the patient is exaggerating his/her pain. | Strongly Disagree - 5 | 1 | |
| | Disagree - 4 | 2 | 2 |
| | Somewhat Disagree - 3 | | |
| | Somewhat Agree - 2 | 1 | 2 |
| | Agree - 1 | | |
| | Strongly Agree- 0 | | |
| | Strongly Agree - 5 | 2 | 2 |
| | Agree - 4 | 2 | 2 |
| | Somewhat Agree - 3 | | |
| | Somewhat Disagree - 2 | | |
| Q2. In chronic pain, the assessment should include measurement of the pain intensity, emotional distress, and functional status. | Disagree - 1 | | |
| | Strongly Disagree - 0 | | |
| | Strongly Agree - 5 | 2 | 1 |
| | Agree - 4 | 1 | 3 |
| | Somewhat Agree - 3 | 1 | |
| Q3. There is good evidence that psychosocial factors predict outcomes from back surgery better than the patient's physical characteristics. | Somewhat Disagree - 2 | | |
| | Disagree - 1 | | |
| | Strongly Disagree - 0 | | |
| | Strongly Agree - 5 | | |
| | Agree - 4 | 3 | 3 |
| Q4. Early return to activities is one of my primary goals when treating a patient with recent onset back pain. | Somewhat Agree - 3 | 1 | 1 |
| | Somewhat Disagree - 2 | | |
| | Disagree - 1 | | |
| | Strongly Disagree - 0 | | |
| | Strongly Agree - 5 | 1 | 2 |
| Q5. Antidepressants usually do not improve symptoms and function in chronic pain patients. | Disagree - 4 | 2 | 1 |
| | Somewhat Disagree - 3 | 1 | 1 |
| | Somewhat Agree - 2 | | |
| | Agree - 1 | | |
| | Strongly Agree- 0 | | |
| Q6. Cognitive behavioral therapy is very effective in chronic pain management and should be applied as early as possible in the treatment plan for most chronic pain patients. | Strongly Agree - 5 | 2 | 2 |
| | Agree - 4 | 1 | 2 |
| | Somewhat Agree - 3 | 1 | |
| | Somewhat Disagree - 2 | | |
| | Disagree - 1 | | |
| Q7. I feel comfortable calculating conversion doses of commonly used opioids. | Strongly Disagree - 0 | | |
| | Strongly Agree - 5 | | |
| | Agree - 4 | 1 | 2 |
| | Somewhat Agree - 3 | 1 | 1 |
| | Somewhat Disagree - 2 | 1 | 1 |
| Q8. Long-term use of NSAIDs in the management of chronic pain has higher risk for tissue damage, morbidity, and mortality than long-term use of opioids. | Disagree - 1 | 1 | |
| | Strongly Disagree - 0 | | |
| | Strongly Agree - 5 | 1 | |
| | Agree - 4 | | 2 |
| | Somewhat Agree - 3 | 1 | 1 |
| Q9. There is good medical evidence that interdisciplinary treatment of back pain is effective in reducing disability, pain levels, and in returning patients to work. | Somewhat Disagree - 2 | 1 | 1 |
| | Disagree - 1 | | |
| | Strongly Disagree - 0 | | |
| | Strongly Agree - 5 | 3 | 2 |
| | Agree - 4 | 1 | 2 |
| Q10. I believe that chronic pain of unknown cause should not be treated with opioids even if this is the only way to obtain pain relief. | Somewhat Agree - 3 | | |
| | Somewhat Disagree - 2 | | |
| | Agree - 1 | 1 | |
| | Strongly Agree- 0 | | |
| | Strongly Disagree - 5 | | 2 |
| Q11. Under federal regulations, it is not lawful to prescribe an opioid to treat pain in a patient with a diagnosed substance use disorder. | Disagree - 4 | 4 | |
| | Somewhat Disagree - 3 | | 2 |
| | Somewhat Agree - 2 | | |
| | Agree - 1 | | |
| | Strongly Agree- 0 | | |
| Q12. I know how to obtain information about both state and federal requirements for prescribing opioids. | Strongly Agree - 5 | 1 | 2 |
| | Agree - 4 | 2 | 2 |
| | Somewhat Agree - 3 | | |
| | Somewhat Disagree - 2 | | |
| | Disagree - 1 | | |
| | Strongly Disagree - 0 | 1 | |
| Estimate the total number of opioid analgesics prescriptions prescribed to patients per week: | 0-20 | 3 | 3 |
| | 21-40 | | |
| | 40 -60 | | |
| | 61-80 | | |
| | 81-100 | | 1 |
| | >100 | 1 | |

Appendix E
CDC Key Static Slides

THE EPIDEMIC

CDC, 2016

[2]

Chronic Pain and Prescription Opioids

- **11% of Americans experience daily (chronic) pain**
- **Opioids frequently prescribed for chronic pain**
- **Primary care providers commonly treat chronic, non-cancer pain**
 - account for ~50% of opioid pain medications dispensed
 - report concern about opioids and insufficient training

CDC, 2016

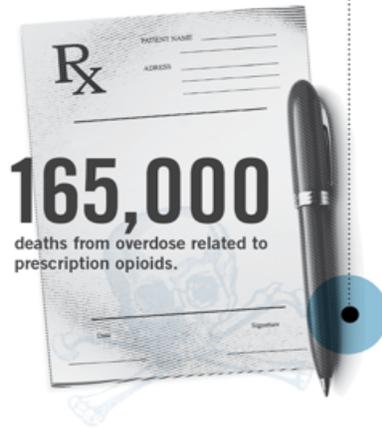


● Americans, aged 12 or older, either abused or were dependent on prescription opioids in 2014.

CDC, 2016

[4]

● Since 1999, there have been more than

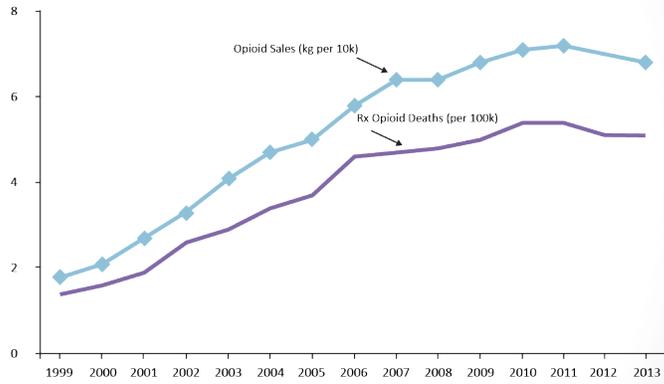


165,000
deaths from overdose related to prescription opioids.

CDC, 2016

[5]

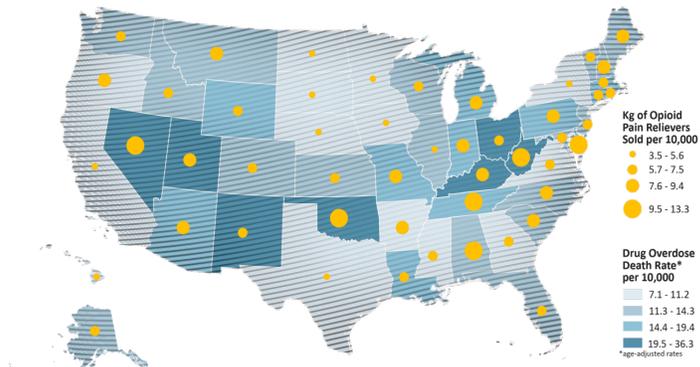
SHARP INCREASE IN OPIOID PRESCRIPTIONS INCREASE IN DEATHS



National Vital Statistics System, DEA's Automation of Reports and Consolidated Orders System

6

Role of Prescribing Opioids and Overdose Deaths



*Death rate, 2013, National Vital Statistics System. Opioid pain reliever sales rate, 2013, DEA's Automation of Reports and Consolidated Orders System

Appendix F

Peg Screening Tool

PEG Pain Screening Tool

1. What number best describes your pain on average in the past week:

0 1 2 3 4 5 6 7 8 9 10

No Pain

Pain as bad as
you can imagine

2. What Number best describes how, during the past week, pain had interfered with your enjoyment of life?

0 1 2 3 4 5 6 7 8 9 10

Does Not
Interfere

Completely
Interferes

3. What Number best describes how, during the past week, pain had interfered with your general activity?

0 1 2 3 4 5 6 7 8 9 10

Does Not
Interfere

Completely
Interferes

Appendix G
 CDC Checklist

Checklist for prescribing opioids for chronic pain

For primary care providers treating adults (18+) with chronic pain ≥3 months, excluding cancer, palliative, and end-of-life care

CHECKLIST

When CONSIDERING long-term opioid therapy

- Set realistic goals for pain and function based on diagnosis (eg, walk around the block).
- Check that non-opioid therapies tried and optimized.
- Discuss benefits and risks (eg, addiction, overdose) with patient.
- Evaluate risk of harm or misuse.
 - Discuss risk factors with patient.
 - Check prescription drug monitoring program (PDMP) data.
 - Check urine drug screen.
- Set criteria for stopping or continuing opioids.
- Assess baseline pain and function (eg, PEG scale).
- Schedule initial reassessment within 1–4 weeks.
- Prescribe short-acting opioids using lowest dosage on product labeling; match duration to scheduled reassessment.

If RENEWING without patient visit

- Check that return visit is scheduled ≤3 months from last visit.

When REASSESSING at return visit

Continue opioids only after confirming clinically meaningful improvements in pain and function without significant risks or harm.

- Assess pain and function (eg, PEG); compare results to baseline.
- Evaluate risk of harm or misuse:
 - Observe patient for signs of over-sedation or overdose risk.
 - If yes: Taper dose.
 - Check PDMP.
 - Check for opioid use disorder if indicated (eg, difficulty controlling use).
 - If yes: Refer for treatment.
- Check that non-opioid therapies optimized.
- Determine whether to continue, adjust, taper, or stop opioids.
- Calculate opioid dosage morphine milligram equivalent (MME).
 - If ≥50 MME/day total (≥50 mg hydrocodone; ≥33 mg oxycodone), increase frequency of follow-up; consider offering naloxone.
 - Avoid ≥90 MME/day total (≥90 mg hydrocodone; ≥60 mg oxycodone), or carefully justify; consider specialist referral.
- Schedule reassessment at regular intervals (≤3 months).

REFERENCE

EVIDENCE ABOUT OPIOID THERAPY

- Benefits of long-term opioid therapy for chronic pain not well supported by evidence.
- Short-term benefits small to moderate for pain; inconsistent for function.
- Insufficient evidence for long-term benefits in low-back pain, headache, and fibromyalgia.

NON-OPIOID THERAPIES

Use alone or combined with opioids, as indicated.

- Non-opioid medications (eg, NSAIDs, TCAs, SNRIs, anti-convulsants).
- Physical treatments (eg, exercise therapy, weight loss).
- Behavioral treatment (eg, CBT).
- Procedures (eg, intra-articular corticosteroids).

EVALUATING RISK OF HARM OR MISUSE

Known risk factors include:

- Illegal drug use; prescription drug use for nonmedical reasons.
- History of substance use disorder or overdose.
- Mental health conditions (eg, depression, anxiety).
- Sleep-disordered breathing.
- Concurrent benzodiazepine use.

Urine drug testing: Check to confirm presence of prescribed substances and for undisclosed prescription drug or illicit substance use.

Prescription drug monitoring program (PDMP): Check for opioids or benzodiazepines from other sources.

ASSESSING PAIN & FUNCTION USING PEG SCALE

PEG score = average 3 individual question scores (30% improvement from baseline is clinically meaningful)

Q1: What number from 0–10 best describes your **pain** in the past week?
 0=“no pain”, 10=“worst you can imagine”

Q2: What number from 0–10 describes how, during the past week, pain has interfered with your **enjoyment of life**?
 0=“not at all”, 10=“complete interference”

Q3: What number from 0–10 describes how, during the past week, pain has interfered with your **general activity**?
 0=“not at all”, 10=“complete interference”



U.S. Department of Health and Human Services
 Centers for Disease Control and Prevention

TO LEARN MORE

www.cdc.gov/drugoverdose/prescribing/guideline.html

March 2016