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Opioid Dosing's Impact on Numeric Pain Rating Scale and Urine Toxicology Results

Presented to the Faculty of the School of Nursing
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In partial fulfillment of the
requirements for the degree of
Doctor of Nursing Practice

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Abstract

Background: Concerns about opioid prescribing in the United States have been rising (Centers for Disease Control and Prevention [CDC], 2016). Assessing pain scores, along with urine toxicology screenings can provide information to both patients and providers about prescription opioids.

Objectives: The purpose of this retrospective chart review study was to compare numeric pain scores and urine toxicology results between two different groups of patients who were being prescribed daily $<90\text{mg}$ opioid dosing versus $\geq 90\text{mg}$ opioid dosing.

Methods: This retrospective chart review sample was of 134 adult chronic pain patients at one pain management clinic. Patients' average numeric pain rating while using opioids for a year in the $<90\text{mg}$ daily opioid dosing versus $\geq 90\text{mg}$ daily opioid dosing group at initial visit and after a year on opioids were analyzed. Urine toxicology screening results were analyzed.

Results: Of the 134 patients, 9 (6.7%) failed urine toxicology screenings, 6 from the ($<90\text{mg}$ MED low dose group) and 3 from the ($\geq 90\text{mg}$ MED high dose group). Of 134 patients, $n=77$ (57.5%) improved their pain score in the year, $n=57$ (42.5%) had no improvement or worse pain on opioids. Insurance type: of the 134 patients, Medicaid 32.1% ($n=43$), Medicare 29.1% ($n=39$) Workers Compensation 19.4% ($n=26$), and private insurance 18.7% ($n=25$).

Conclusions: This study indicates insurance type was a statistically significant variable and indicates further research is needed within the two dosing groups to understand how this may influence changes to opioid prescribing. Urine toxicology failures between both dosing groups was only 6.7%.

Background

In 2016 the Centers for Disease Control and Prevention (CDC) issued guidelines for prescribers who are managing chronic pain patients. These guidelines generally try to lower daily dosing to under 50mg MED and at most daily dosing of 90 mg MED, plus to use significant medical justification if prescribing over 90MED (CDC, 2016). These new guidelines have given insurance companies justification to refuse payment for higher dosing despite many being on these higher daily doses. In the 1990's and early 2000's in America, chronic non-cancer pain patients had been managed with opioid therapy, as well as adjunctive approaches, with the full support of multiple medical and national research institutions (Edlund, Martin, Russo, Devries, Braden & Sullivan, 2014). Healthcare providers today are currently seeing an increase in recommendations from multiple professional organizations that indicate changes to how opioids for chronic pain could be prescribed and managed more safely. Prior to these new recommendations, providers were encouraged to educate patients that under-treatment of acute pain leads to chronic pain, and opioids were given to avoid this complication. The concerns about misuse of opioids were generally limited in the literature until this decade. Some studies now indicate higher misuse rates for patients who use larger daily doses of opioids (Bohnert et al., 2011). Taking prescription opioids for longer periods of time or in higher dosages can increase the risk of opioid misuse disorder, overdose, and death (CDC, 2018). From 1999 to 2017, greater than 217,000 people died in the United States from overdoses related to prescription opioids (CDC, 2018). More than ever, patient safety with the use of opioids is now in question. Providers are now however left with questions about their prescribing practices and patient outcomes with the varying doses of chronically used opioids for chronic pain. Some providers at pain clinics take care of patients who are on much higher dosing of opioids than the

current general recommendations. They are concerned about the current status of their patients who may have been on opioids for chronic pain for longer than a decade and have done well physically, mentally, with no signs of misuse.

This retrospective Institutional Review Board (IRB) exempt study explored a single practice's prescribing of opioids by dosing of high and low groups, and their patients' average numeric pain score initially, after a year on opioids and their urine toxicology screening results.

Problem Statement

The CDC (2016) have issued their recommendations to address opioid dosing for chronic pain management, generating specific daily dosing levels of opioids for chronic noncancerous pain patients. These recommendations are meant to give guidance to providers when prescribing opioids for chronic non-cancer pain patients. It is important to realize the CDC's guidelines do not prohibit the use of opioids over 90 mg daily MED. They ask that the higher dosing (>90mg daily MED) be done with caution and that the provider justify the decision. The guidelines are further aimed toward primary care of chronic pain patient. However, these guidelines are being applied without distinction in the chronic pain management clinic setting by insurance companies. The CDC opioid dosing recommendations focused on management of chronic pain with the exception of cancer care, hospice and palliative care. These exceptions are because comfort care is often the goal when end of life is imminent.

Significant controversy and concern from multiple medical organizations surround the CDC's strict recommendation and limits of daily opioid dosages. The American Medical Association (AMA) (2016) states that the current CDC's opioid prescribing guidelines are not based on risk/benefit studies for patients but on risk studies alone. Further, another organization argued

that these guidelines should not be used to limit therapy for any one patient (American Pain Society, 2016). Additionally, the American Academy of Pain Management (2016) is concerned with the recommended dosing limit that suggests no more than 90mg of morphine equalization dosing (MED) be given daily, despite the reality that much higher doses have been helpful to patients. These higher doses have been perceived as safe in previous years (American Pain Society, 2009). The American Academy of Pain Medicine (2016) reports that they have significant concerns regarding the methodology of the evidence which was cited by the current CDC recommendations. The American Academy of Pain Medicine (2016) feels more research needs to be done before limiting daily dosing levels of opioids for all noncancerous chronic pain patients. Therefore, multiple groups such as the AMA, American Pain Society, American Academy of Pain Management, and the American Academy of Pain Medicine all state concerns about the CDC's research and new guidelines.

These conflicting views over the daily dosing of opioids leave providers, patients and communities trying to determine what is best for their clinical setting. Providers want to help patients who have unique pain levels and misuse histories by individualizing daily dosing levels of opioids that help reduce pain, minimize misuse, and improve function. One of the questions that I examined in my study was, would there be a difference in the initial visit numeric pain levels versus follow up numeric pain levels and urine toxicology results at different dosing levels, which are: high ≥ 90 daily Morphine Equalization Dose (MED) versus low < 90 daily MED dosing of daily opioids for chronic pain patients at a single practice?

The suggested relationship between the higher daily dose of opioids and higher misuse rates is a concern for communities, however, providers have found that some patients currently on higher dosages are not necessarily susceptible to misuse (Sullivan & Howe, 2013). These

patients often have low pain levels and function for decades even with these higher doses of medication. Inappropriately lowering dosing of opioids has led to negative mental and physical repercussions on patients functioning (Anson, 2016).

According to the American Pain Society (2009), anywhere from 1%-8% of people will develop an opioid misuse disorder when using any opioid. Chou (2015) in a systematic review states that in the pain clinic setting, prevalence of opioid misuse ranges from 8% to 16%. . “Misuse is generally defined as an intentional therapeutic use of a drug in an inappropriate way” (Cheatle, 2015). Recent retrospective studies often measure only the opioid misuse rates and infrequently the pain reduction scores and benefits to the patients (Boscarino et al., 2016). The results of this current retrospective chart review study provides valuable feedback for dosing levels, initial average pain scores, average pain scores after a year on opioids and urine toxicology results, to patients and providers at a single pain management practice.

Purpose

The purpose of this retrospective chart review study was to compare patients’ initial average pain scores, average pain scores after a year on opioids and urine toxicology results between two groups of patients who were prescribed within the general current Centers for Disease Control and Prevention dosing guidelines (<90 MED), and the other group was above the dosing recommendations (≥ 90 MED). Inclusion criteria for participants was that patients had been on opioids for at least year in this study, had a chronic pain diagnosis of the top four seen at the clinic which were; spinal stenosis, spinal degenerative disc disease, spinal facet arthropathy, multiple areas of arthritis, an initial visit numeric pain score, a current urine opioid urine toxicology, follow up numeric pain rating score, and be greater than 18 years old.

Specific Aims

The specific aims of the study were to measure patient outcomes from the pain management outpatient clinic for the following variables:

1. Compare the results of opioid urine toxicology screenings in patients receiving daily dosing of <90 mg morphine equalization dosing (MED) versus the ≥ 90 mg MED.
2. Compare the numeric average pain score since last visit of patients to the initial numeric average pain score for those receiving daily dosing of <90mg MED versus ≥ 90 mg MED.
3. Compare the daily <90mg daily MED versus ≥ 90 mg daily MED opioid dosing levels by gender differences.
4. Compare the daily <90mg daily MED versus ≥ 90 mg daily MED opioid dosing levels by insurance type.
5. Describe and compare the demographics of patients by age, chronic pain diagnosis, and improvement and/or decline of pain scores on opioids.

Significance

Improving population health and health system performance are two of the Institute of Healthcare Improvement's Triple Aim Initiatives (Institute of Healthcare Improvement, 2012). Opioid guidelines that improve health system performance and population health in any community are important to the country. The data generated from this study may offer insight to guide advanced nurse practitioners and other providers managing chronic pain patients' prescriptions.

The National Institutes of Health (NIH) gathered researchers in spring 2018 at the NIH at a symposium, to discuss chronic pain management and the opioid crisis (National Institute of Health [NIH], 2018). The culture of opioid prescribing is changing and pain practice providers want to be current yet, also sensitive to chronic pain patients' needs and those of their communities.

Literature Review

The opioid crisis has demanded political, academic, financial and community attention in the last decade. Concerns within healthcare about the misuse of opioids have increased. According to Dahlmaer et al., 2016, approximately 20.4% percent of the adults in the United States have chronic pain. An estimated 5.1 million people used prescription pain relievers for non-medical reasons in the quality improvement study by Hamill-Ruth, Larriviere & McMasters (2013). Cheatle (2015) defines misuse of opioids generally as an intentional therapeutic use of a drug in an inappropriate way. For example, a patient may take pain relievers in excess of prescription, which would constitute misuse. The following sections provide literature on some of the key variables that were examined in this study.

Opioid Dosing

To help understand opioid dosage rates, a retrospective study by (Morasco et al., 2017) divided prescription dosing by levels to assess outcomes of opioids. This study used low daily dosage of (5-20 mg MED), moderate daily dose (20.1-50mg MED) and higher daily dosing (50.1-120mg MED) for patients with musculoskeletal pain diagnoses and on long term opioid therapy. In this study (Morasco et al., 2017) rates of misuse were 7.6-8.2% for all daily dosage groups, with a slightly lower prevalence of opioid misuse of 7.8% for the high daily dosing level

group. In addition, (Morasco et al., 2017) states the higher dosing of opioids with lower misuse rates, may mean the patients are using other substances to supplement their pain relief but not reporting this. Studies vary in the daily opioid dosing levels due to lack of agreement on what are high and low levels of opioid daily dosing. For example, a study by Gomes (2011) which was a population based case controlled study, stated that 200mg daily MED or more was considered a high dose. In a retrospective study by (Chung et al., 2016) the study used 60mg of daily opioid dosing as the high dosing level.

Opioid Urine Toxicology Screening

Hamill-Ruth, Larriviere & McMasters (2013) state that opioid urine drug screening is useful in identifying substances currently in the patient's system. Opioid urine toxicology information is an important point of care service and tests for classes of medication such as opioids. The work by Keary, Wang, Moran, Zayas & Stern (2012) add that urine toxicology testing using gas chromatography (GC) followed by mass spectroscopy (MS) is considered the gold standard for confirmatory urine toxicology testing. One study rates urine toxicology results with an 89% reliability and validity score (Manchikanti, Malla, Wargo & Fellows, 2011). A retrospective study by Gupta (2011) helps define normal (positive) urine screenings versus abnormal (negative) urine screenings. A normal (positive) urine screening is defined as a one that has expected findings based upon prescribing, the prescription monitoring program monthly script data, and patients stated use. An abnormal (negative) urine is defined as 1) the absence of a prescribed opioid, 2) the presence of an additional non-prescribed controlled substance, 3) detection of an illicit substance, or 4) an adulterated urine sample (Gupta, 2011).

Chronic Pain Level Score

The outcomes for the patient in terms of decreasing pain levels or not with daily opioids for chronic non-cancer pain has fewer studies than the misuse rates of opioid studies in literature. The retrospective study by (Chung et al., 2016) used dosing of opioids less than 60mg daily MED to assess pain levels. This study found patients' pain levels were lower on longer term daily opioids of at least two months. An office based retrospective study of 140 patients by (Zhou et al., 2017) looked at tapering opioids until abstinence versus those who stayed on opioids (average dosing 83.5-123.4mg daily MED). The study showed statistical significance for decreased numeric pain levels for both groups despite the differing dosing levels of opioids. A retrospective study of 246 patients by (Henry, Wilsey, Melnikow and Losif, 2015) found only one point difference on the pain level numeric scale of patients in any of the different daily dosing levels starting at 30mg daily MED or more of opioids. A large population (1,781) study comparing scheduled dosing (325 people) versus pain contingent dosing of opioids (967 people) revealed large differences in opioid dosage for pain management. This study used daily opioid dosing at 37mg daily MED for the pain contingent group versus 97 mg daily MED for the time scheduled group, yet the pain levels between the two groups were similar (Von Korff et al., 2011). None of the previous studies used the current CDC general recommendations as guidelines for their studies because the CDC guidelines were not published yet. Providers are left to discover if there is a pain level improvement or not within the current CDC guidelines (2016) for their patients within <90 mg daily MED versus ≥ 90 mg daily MED.

The literature also reveals that the numeric pain rating scale provides sufficient discriminative power for chronic pain patients to describe their pain intensity (Hjermstad, 2011). Further, the reliability is $r=0.96$ and validity of the numeric pain scale is $v=0.86$ (Ferraz et al., 1990).

Gender Differences

A recent cross sectional, self-reported study by (Han et al., 2015) suggests that gender differences are seen in prescription opioid misuse. This study reported a male prevalence of 2.9% and a female prevalence of 1.4% for an opioid misuse disorder, but it was not reported as statistically significant. Another population study, with 2,039 patients using electronic health records, reports that women more than men (54% vs 46%) have opioid misuse disorders (Boscarino et al., 2016). Darnell, Stacey and Chou, (2012) meta-analysis study adds that women report more chronic pain than men, and may be treated at higher opioid dosages. Results are mixed and not conclusive.

Insurance Type

The survey study by (Han et al., 2015) reported that private insurance rate of opioid misuse is 1.6% and Medicaid is 3.5%. In a systematic database search, Voon, Karamouzian & Kerr (2017) reported there were no demographic factors such as insurance type that were consistently different between those with prescription opioid use disorder and those without. For adults older than 65 the prevalence of opioid use disorder for those on Medicaid and other public coverage is higher than those with private insurance (Jeffery et al., 2018). The study by (Jeffery et al., 2018) a retrospective cohort study from 2007-16 with 48 million individuals, showed opioid use in commercial beneficiaries at 14%, Medicare beneficiaries by age ≥ 65 at 26% and disabled Medicare beneficiaries at 52%.

Chronic Pain Diagnoses

“Chronic pain is defined as any pain lasting longer than 12 weeks” (NIH, 2011, p.2). Pain is very personal and is by nature a subjective experience. The top four chronic pain diagnoses in this study were used to give readers an idea of the population of study to compare with their own

population. These diagnoses are spinal stenosis of the cervical, lumbar, or thoracic regions, multiple areas of arthritis, degenerative disc disease of the lumbar, cervical, or thoracic regions, and facet arthropathy of any region of the spine.

There are no tests to measure and locate pain with precision, but the numeric pain rating scale is used as a starting point of measurement to assess improvement when interventions are used. The goal of treatment is usually to reduce pain and improve function. However, sometimes only one of these measures may result in improvement. Finally, it is important to remember that often, chronic pain is managed not cured (NIH, 2011).

Clinically Meaningful Improvement with Opioid Use

Clinically meaningful improvement with opioids is defined as an improvement in pain and function of at least 30% as compared to the start of treatment or in response to a dose change (Agency Medical Directors Group, 2015). The pain score improvement or decline was obtained for this study. Busse (2018) did a systematic review of RCT's (random control trials) (26,169 participants) of opioids for noncancerous chronic pain and found a 0.69 point improvement for pain levels when compared with a placebo.

Age

Generally, the literature reveals the presence of a higher prevalence of chronic pain associated with advancing age (NIH Medline Plus, 2011).

Theoretical Framework

Auguste Comte in the 19th century revealed that his theoretical framework of Positivism Theory assumes that it is possible to observe social life, and establish reliable, valid knowledge

about how it works (Crossman, 2018). Two main principles of Positivism theory are 1) the logic of inquiry is identical across all branches of science, and 2) the goal of inquiry is to explain, predict, and discover. Researchers put pain under a microscope when assessing analgesia and its effects on pain patients (Alderson, 1998). The use of Positivism Theory (Alderson, 1998) for social medicine takes analgesia and its effects on pain into account, as well as context of people lives, such as how chronic pain may differ from gender or socioeconomic vantage points. These concepts drove the development of this study as it aimed to discover in a logical framework the effects of analgesia on chronic pain patient's numeric pain levels, and urine toxicology results.

Positivism theory in health is concerned with the events of cause and effect. If a patient has a certain amount of medication there is a certain degree of relief or not that could be measured. "The numeric pain rating scale has shown high correlations with other pain-assessment tools in several studies" (Haefeli & Elfering, p. S19, 2006). Urine toxicology results will validate that medications are in the patients system. Positivist Theory suggests that clinical norms (such as CDC's opioid dosing guidelines) could influence a patient's chronic pain management outcomes (Alderson, 1998). Positivism theory for social medicine means to use objective data as grounds for research and treatment (Haefeli & Elfering, 2006) for analgesia.

Identifying and Defining Variables

The variables that are described in this study include the independent clinical variable of the daily milligram dosing level of opioids described in daily Morphine Equalization Dosing (MED). One dependent variable looks at the patient's average numeric pain rating score while on opioids. Another dependent variable measured a patient's initial average numeric pain score with their pain score during opioid treatment at the clinic was measured. Another dependent variable measured the urine toxicology report which compares the urine results from patients in the two

different daily dosing groups. The demographic variables include, age, gender, chronic pain diagnosis, and type of insurance the patient was currently used. These variables are illustrated in a variable map in figure one (Figure 1) and the variable table (Table 1).

To operationalize the variables surrounding the daily dosing groups of opioids a brief overview of terminology is necessary. The terminology of the independent dosing variable in this study is daily dosing using two different amounts. When a provider sees the specific measures noted such as; daily dosing of 90 mg daily morphine equalization dosing (MED), this means that a patient may be on any number of different opioid medications other than morphine or may be on morphine. MED is relevant to understand as all narcotics are equalized to the molecule morphine. For example, 10 mg daily of Hydrocodone equals the strength of 10 mg daily of morphine, this is called the Morphine Equalization Dose (MED). However, 10 mg of oxycodone equals 15 mg of morphine. All opioids are equalized by conversion factors to equal morphine abilities. It is used as a standard of measure. Therefore, all opioids carry a morphine equalization dosing. When a provider observes 90mg daily MED this means a person's daily dosing of opioid medications equals this strength in dosing to morphine.

Methods

Design

This retrospective chart review study used a descriptive comparative design to compare independent variables of patient low dosing of opioids (<90mg daily MED) versus high dosing of opioid (\geq 90 mg daily MED) to various dependent variables. With this design, the researcher could answer the proposed research questions and aims. This design compared and assessed patients' level of opioid dosing by, chronic pain numeric average pain scores at initial visit and at

return visit after being on opioids for at least a year. The design further compared urine toxicology screenings, and other demographic variables such as gender, age, chronic pain diagnoses, and insurance type. The design was good for analyzing multiple outcomes. The descriptive comparative design was realistic and feasible.

Sample

The target sample was adult chronic pain patients, male and female, living in a rural area in N.Y. The pain management clinic functions to provide chronic pain management services to a rural small population for any chronic pain condition. The largest proportion of our pain clinic population suffer from chronic degenerative disc disease of any area of the spine, spinal stenosis of any area of the spine, arthritis in multiple areas, and spinal facet arthropathy. The top five treatments for chronic pain at the PM clinic are 1) physical therapy 2) steroid injections 3) transcutaneous electrical nerve stimulation (TENS) 4) opioid medications 5) anti-inflammatories, muscle relaxers, neuropathy medications and anti-depressants. The outpatient pain management clinic sees an average of 100 patients a week, adults of all ethnic origins.

This retrospective chart review study involved inclusion and exclusion criteria. Patients were included in the study if they had any chronic pain condition within the top four diagnoses; degenerative disc disease of any area of the spine, spinal stenosis of any area of the spine, arthritis in multiple areas, and spinal facet arthropathy. Patients were seen at the clinic during May 1, 2016 thru April 30, 2018 and were on prescribed opioids within the two dosing groups for at least a year. The criteria included; <90 mg daily MED and ≥ 90 mg daily MED, age greater than 18, and an opioid urine toxicology screening at the clinic. Patients were excluded from the study if they were: 1) being treated for cancer, 2) in palliative or hospice care 3) on the opioids Butrans, Belbuca, Tramadol or Nucynta (which is less than 10 percent of this clinic's

population). (The reasoning behind point three is that there is scientific debate about how to convert these drugs to the MED).

Sample Size

The target population consisted of 134 patients. After inclusion/exclusion criteria, a total of 134 adult (>18 years old) patients charts were included. The study compared two groups of patients; using the charts of 67 patients from the daily <90mg MED and 67 patients from the daily \geq 90mg MED group.

A simple random sampling of 134 health records were conducted for the dates May 1, 2017 thru April 30, 2018 for this study. Both paper charts and electronic paper charts were used from this time frame. A systematic sampling method of every other paper chart within the alphabetized charts took place. If the needed data was not found from the paper chart, the data was collected on this patient from the eClinical works electronic data system. Collection data occurred from patient visits from May 1, 2017- April 30, 2018 but the researcher needed to go back occasionally into patients charts until a urine toxicology screen could be found but no further back than May 1, 2016. Patients were included only once in the study. Information was recorded without identifiers, other than medical record number (1-134) initially for organization.

Setting

Data was collected from the PM clinic that serves a chronic pain population in rural New York State. The clinic is partnered with a local hospital. The clinic staff consists of three providers, which include one doctor of anesthesiology specializing in pain management, one doctor specializing in pain medicine, and a nurse practitioner specializing in pain medicine, two nurses, four medical assistants, and two receptionists. The clinic serves approximately 400

patients a month. Patients are usually seen every three months if they are on any opioid medication but may come in more due to a pain exacerbation. The clinic has a clientele of approximately 1000 patients, all of whom are adults, with a third or more on daily opioids. Patients are usually seen 3-4 times a year when stable but more often if pain is exacerbating. The receptionist handed the patient the numeric pain rating scale and opioid urine toxicology screening cup when they enter for their appointment. The receptionist was responsible for scanning data from the numeric pain rating scale for average pain since last visit and placing the results of the urine toxicology screenings into the patients' medical record. These reports are then reviewed by the provider with the patient.

Measurements

Descriptive analysis analyzed the frequency and percentages of the following; age, opioid daily dosing of ≥ 90 mg MED versus opioid daily dosing of < 90 mg MED, initial pain scores and pain scores after a year on opioids, urine toxicology screenings, insurance type and chronic pain diagnosis (Table H). The study used a two-tailed independent t-test, with an effect size (*Cohen's d*) of 0.5, a statistical power level of 0.8% and an error probability level of 0.05 for the analysis.

Instruments

The variables that were measured in this retrospective descriptive comparative design study included the following demographics; gender, insurance status, age, and primary diagnosis at the first visit. The independent variable measured was the opioid dosing level group of high versus low groups. Dependent variables include the difference between the initial visit average numeric pain score and the numeric pain score from a visit after the patient was on opioids for a year. These results were compared with the patients' urine toxicology reports while they were on opioids.

The PM clinic has paper charts on each patient with their recorded pain scores and the results of their urine toxicology screenings until May 2017, then the charts became electronic. The numeric pain scale average since last visit was recorded after a patient fills it in at each visit, and an opioid urine toxicology is done at least yearly by a medical assistant, or receptionist, and sent to the urine toxicology laboratory.

When the opioid urine toxicology screening was performed the patient was handed a urine cup with lid and asked to use the patient restroom, which was within sight of the reception/medical assistant area. The patient then used the bathroom alone. Then the urine was returned to receptionist or medical assistant. All opioid drugs were then listed on the Ameritox/Dominion urine form by the medical assistant or receptionist that the patient stated they were taking. The patient signed that this was their urine and that they agree with the medications listed to be tested, then the bag was sealed with the patient watching. The bag with the cup of urine was mailed to the urine toxicology company by United Postal Service (UPS). Opioid urine toxicology screenings at the pain management clinic are sent to Ameritox or Dominion Laboratories (2018) for testing and results (Appendix C). The results include: 1) medications patient states they are taking- are they in the urine or not 2) medications in urine not stated by patient 3) illegal medications found in urine. The patients whose office visits are paid for by Workers Compensation are sent to Dominion and all others to Ameritox. Dominion has an agreement of business association with Workers Compensation in N.Y. Both laboratories return the urine results with the same data analysis and methods of screening. Both laboratories use gas chromatography-mass spectrometry and liquid chromatography- tandem mass spectrometry. These methods are considered medical standard of care and the gold standard for urine toxicology screenings (American Medical Association, 2016).

The laboratory returns the results (usually within a week) with positive (pass) or negative (fail) for each medication that was listed on the original intake that the patient verified. The lab sends results for drugs not listed by the patient, such as illicit; heroin, cocaine, methamphetamine, and benzodiazepines or other drugs in the muscle relaxant class. False-positives by the labs are not taken into consideration at this office. If a patient disagrees with the urine results and feels they are a false negative, they will need to find another provider at a different clinic or continue with the recommended prescribing changes or other treatment plan made by the provider.

Urine Toxicology Screening

The scoring for this study from the urine toxicology screenings was positive for a pass and negative for a fail. A positive (pass) means that what the patient states they have been taking their opioid medications are 1) prescribed 2) and were documented in the urine toxicology screening. A negative (fail) may mean that 1) the patient is not taking their opioid medications as prescribed 2) no logical reason for missing dosing (such as hospital stay) as determined by provider. (Appendix C)

Numeric Average Pain Score

The numeric pain rating scale average (Figure 2) since last visit are asked as each visit by the receptionist or medical assistant. Also, on the initial visit for pain management, the average numeric pain score was taken. The patient was given this form to fill out and circles a number between 0-10 that best describes their pain average. Zero represented no pain at all, the mid-range numbers are moderate pain, and the upper numbers represented the worst possible pain.

Dosing Group

The CDC's Opioid Dosing Guidelines form a general framework for dosing groups for this study (Appendix D). These guidelines were disseminated in 2016.

Data Collection Procedure

IRB approval was obtained and the data extraction for this descriptive-comparative study design was collected from patient's paper and electronic chart data with dates ranging from May 1, 2016 through April 30, 2018. The eligible patients were determined by randomly selecting every other paper chart, noting the dosing of opioids the patient is on, then placing the data in the high or low dose group into the code sheet. If a patient was not on opioids, that chart was skipped. The results of the urine toxicology screen, the initial visit average numeric pain score, the visit average numeric score after a year on opioids and the demographic data, such as age, gender, insurance type, and diagnosis were entered into the code sheet (Appendix A & B).

I was the student investigator and collected and entered the data into the code sheet. I have been trained in proper collection and analysis procedures. No additional data collectors were used. Data accuracy check was conducted for 10% of the data, for which I utilized an expert Dr. Juan Diego Harris (pain management doctor at pain management setting) who is familiar with the pain management clinic's opioid urine toxicology screening and numeric pain rating scale assessment. He did not look at the patient collection of records I used but verified the process of collection. Data collection occurred at the pain management clinic.

Data Analysis Plan

Data was imported to IBM SPSS (version 24), which is a statistical software that assists in data mining and analytics. Descriptive analysis looked at the frequency and percentages of the following; age, opioid daily dosing of ≥ 90 mg MED versus opioid daily dosing of < 90 mg MED,

urine toxicology screenings, gender, insurance type, and chronic pain diagnosis (Table H). The study used a two-tailed independent t-test, with an effect size (*Cohen's d*) of 0.5, a statistical power level of 0.8% and an error probability level of 0.05 for the analysis.

Ethical Considerations

My retrospective study was submitted to the IRB at The George Washington University (GWU) for consideration and was approved as an Exempt Study. A letter of approval from the Pain Management Clinic office authority with their permission was obtained for conducting the study during the specified dates and was submitted to the IRB at GWU. In order to maintain the privacy of each subject, all patient data was placed into the coding sheet data and were de-identified other than a made-up numeric patient identifier (1-134). In order to maintain the confidentiality of the code sheet, and SPSS data, the information was stored by the primary contact (student researcher) on a secure hard drive with antivirus protection on a laptop computer. The laptop computer was stored behind a locked door for which the student researcher had the key. The student researcher had the only password to the computer which was protected by a firewall. The student researcher had the only password to the code sheet, SPSS, and the only password to the computer used. The data was backed up on a thumb drive, with password protection, accessible only to the student researcher.

Data Timeline

Data collection began September 2018 and continued until November 2018. The study was launched and complete data collection and data entry on the appropriate code sheet was completed. The student researcher reported monthly to the primary advisor with issues and the progress of the DNP project. The study abstract and research poster was developed during September-December 2018. In December-January 18-2019 the data entry, data cleaning, and

data analysis was completed and findings written into the final draft. The final draft was submitted in February, 2019. In March 2019, the final paper was due. In April, 2019 the final electronic poster will be submitted along with the DNP project to the Himmelfarb Library. In May, 2019 the project is due to The George Washington University DNP Repository.

Results

Demographics and Clinical Characteristics

Urine Toxicology Results

Data analyses were done using descriptive analytics and the independent t test. Of the 134 patients, 9 (6.7%) failed urine toxicology screenings, 6 from the (<90mg MED low dose group) and 3 (\geq 90mg MED high dose group) (Table 3). Of those with passed urine toxicology's (n=125, 93.3%). Of those with passed urine toxicology's (n=61, 48.8%) were in the low dosing group and (n= 64, 51.2%) were in the high dosing group. There was not a statistically significant difference between the opioid dosing level group and failed urine toxicology (p=0.300) (Table 3). Of interest no statistically significant difference was found between age groups and patients with negative urine (p=0.315).

Pain Scores Results

Data analyses were done with descriptive analytics and the independent t test. Overall, pain scores from the first visit at the pain management clinic to a visit after a year on opioids in all 134 patients went from a 7.31/10 to 6.43/10 (change of -0.88). Of those in the low dose group (<90mg MED) changed from 7.24/10 to 6.21/10 (change of -1.03). Of those in the high dose group (\geq 90mg MED) changed from 7.39/10 to a 6.64/10 (change of -0.75) (p=0.953) (Table 3).

The difference in pain scores between the two dosing levels groups was small and not statistically significant. All results under pain scores were not found to be statistically significant.

Insurance Type Results

Data analyses were done with descriptive analytics and the independent t test on insurance variables. Participants with Medicaid had the highest number of people in this study under insurance types with 32% (n= 43). Medicare was second with 29.7% (n=39). Workers Compensation was 19.4% (n= 26), and private insurance were equal 19.4% (n=26). By dosing level group, Medicaid had the most people in the low opioid dosing level group and Medicare the most people in the high opioid dosing level group (Table 3). Overall, Medicaid's low dosing group was (n=19, 28.4) and high dosing group (n=24, 35.8%). Medicare's low dosing group was (n=14, 20.9%), and high dosing group (n=25, 37.3%). Workers Compensation in the low dosing group was (n=18, 6.9%), and high dosing group (n=8, 11.9%). Private insurance for the low dosing group was (n= 16, 23.9%) and the high group (n=10, 14.9%). A statistically significant difference was found in insurance types with the different dosing groups (**p=0.030**) (See Table 3).

Age Results

Data analyses were done with descriptive analytics and the independent t test. The 18-40 age group had the lowest number of people 9.0% (n=12). Of this age group there were (n= 5, 7.5%) in the low dosing group (<90mg MED) and (n=7, 10.4%) in the high dosing group (≥90mg MED). Most people in this study were from the 41-65 age group 70.9% (n=95). Of this group there were (n= 49, 73.1%) from the low dosing group and (n=46, 68.7%) from the high dosing group. In the 66-81 age group there were 20.1% (n=27). There were (n=13, 19.4%) from the low

dosing group and (n=4, 20.9%) from the high dosing group. A significant statistical relationship was not found between age and opioid dosing level group ($p=0.793$) (Table 2).

Gender Results

Of the 134 patients, 53% (n=71) were male and 47% (n= 63) were female. In the low dosing (<90mg MED) daily opioid group, there were (n=33, 49.3%) males and (n=34, 50.7%) females. In the high dosing daily opioid group (≥ 90 mg MED) there were (n=38, 56.7%) male and (n=29, 43.3%) female. There was not a significant statistical relationship between opioid daily dosing level group and gender ($p=0.387$) (Table 3).

Chronic Pain Diagnosis Results

Data analyses were done with descriptive analytics. Participant who had degenerative disc disease at any level of the spine had the largest chronic pain diagnosis at 45.5% (n= 61). The second largest diagnosis was facet arthropathy of any level of the spine 29.1% (n=39). Multiple areas of arthritis were third at 17.2% (n=23). Lastly, stenosis at any area of the spine was 8.2% (n=11). In the categories of low and high opioid dosing groupings, degenerative disc disease was almost equal in numbers for high and low dosing groups. The low dosing group included 30 patients (44.8%) with degenerative disc disease and included 31 patients (46.3%) from the high dosing group. The low dosing group for facet arthropathy of the spine included 3 patients (34.3%), and included 16 patients (23.9%) from the high dosing group. The low dosing group for multiple areas of arthritis included 12 patients (17.9%) and included 11 patients (16.4%) from the high dosing group. The low dosing group for spinal stenosis included 2 patients (3.0%) and included 9 patients (13.4%) from the high dosing group.

Improvement/Decline with Opioids Results

Data analyses were done with descriptive analytics and the independent t test. 32 patients (23.9%) received 30% or greater in reduction of their chronic pain within either opioid dosing group. Of these 32 patients 17 were from the (<90mg MED-low) and 15 (\geq 90 mg MED-high) (Table 3). Final pain scores with opioids were 6.21/10 in the low dose group and 6.64/10 in the high dose group ($p=0.178$) (Table 3). 42% ($n=57$) of patients experienced 0-30% worsening of their pain level while on opioids for chronic pain. Patients with any level of improvement in their pain level included 77 patients (57.5%) while on opioids ranging from 10 percent to 30 percent improvement or in some cases higher (Table 3). The improvement or decline were not shown to have a statistically significant relationship with the opioid dosing groups.

Discussion

The chronic pain management clinic in this study is like many others across the U.S, who are trying to find the balance of managing opioid misuse and helping people manage their daily chronic pain.

Urine Toxicology's

9 out of 134 (6.7%) people received urine toxicology failures in this study, which indicates misuse of medication, however, this was slightly lower than the studies cited in the paper's literature review. Morasco (2017) places the national average of opioid misuse at 7.6%-8.2%. Whereas, Chou (2015) estimates the opioid misuse rate at 8-16%. Yet, the information about the rate of misuse in my study will be helpful to alert providers and patients at clinics to the continual real risk of opioid misuse, whether at a low or high opioid dosing level.

Pain Levels

Overall, changes in pain scores from the first visit at pain management to a visit with a year on opioids in all 134 patients went from a 7.31/10 to a 6.43/10 (change of -0.88). Low dose group (<90mg MED) changed from 7.24/10 to 6.21/10 (change of -1.03). High dose group (\geq 90mg MED) changed from 7.39/10 to a 6.64/10 (change of -0.75) ($p=0.953$) (Table 3). While a statistical relationship was not found, it is interesting on an individual level that 23.9% ($n=32$) were found to have a 30% or greater improvement of their pain level irregardless of dosing. The findings of pain level improvement or lack thereof in this study agreed basically with both studies (Henry, Wisley, Melnikow & Losif, 2015) and (Von Korff et al., 2011), who found that there was less than one point level improvement with the use of opioids at any dosing group in their studies. This information is helpful in that the results point to the importance of managing patients' daily pain improvement expectations while on opioids carefully, as the improvement may be small. This informs providers and patients to look at multiple other ways to manage chronic pain for the long term rather than just with opioids.

Gender

Han et al., (2015) and Boscarino et al., (2016) found larger differences in opioid misuse between the genders; Han et al., (2015) place males with a higher rate whereas Boscarino et al., (2016) place females higher. Darnell, Stacey & Chou (2012) also suggest that women have more chronic pain than men and therefore use higher dosages. The results from this current study disagree with their findings; the current study found that males and females presented almost equal in urine toxicology failure rates ($M=5, 55.6\%$ & $F=4, 44.4\%$). The current study found that men sought chronic pain management more than females, though not significantly ($M=71 (53\%)$ & $F=63 (47\%)$). Further, the current study revealed that males and females were equal in the low dosing opioid category, but for the high dosing group men were more likely to use high daily

opioid doses than females (M=38 (56.7%) & F=29 (43.3%). This is important as it reveals there may be higher daily opioid dosage usage with males, which may influence programs in our area that study male opioid misuse. Further research should look at occupations in the target region of study or other possible variables (e.g. socioeconomic status) that could account for the differences in the current study. One theory for this finding may be that men in our region are in high impact jobs, such as farming, construction, scrap metal work, and may need higher dosing of medications in order to keep working.

Insurance Type

The insurance types at the pain clinic showed a statistically significant relationship to the low daily opioid dosing versus high daily opioid dosing groups. Medicaid was the highest used insurance in the current study (32.1%) compared to Medicare (29.1%), Workers Compensation (WC) (19.4%), and private insurance (19.4%). The insurance type in the current study suggests and agrees with Jeffery et al., (2018) that workers who have private insurance and workers compensation do not present in high numbers at the pain management clinics. Second, Jeffrey et al., (2018) reveals that Medicare patients were daily dosed at around the 56 mg MED in his study, whereas, the current study considered high dosage to be ≥ 90 mg MED. 37.3% of the patients were on Medicare in the current study. My findings revealed private insurance and WC only had 26% of the patients in the high dose group while Medicare and Medicaid together had 74% in the high dosing group. Chronic pain patients who presented at the pain clinic used insurances other than private or WC 78% of the time. This information is important as it reveals possible financial struggles people with chronic pain face. With private insurance and WC there was a 22.2% urine toxicology failure and Medicare and Medicaid a 77.6% urine toxicology failure. One possible explanation for the relationship found is that the Workers Compensation

(WC) board does not allow or approve many people to use high dose opioids (>90mg MED) while on WC.

Limitations

One limitation of the study was the limited data variables researched in the study. The study provides good baseline data that could give providers and patients a starting point to discuss goals and values with opioid use. However, assessing patients functioning while on opioids could give further insight for both provider and patient. Another limitation of the study was that the sample population was obtained from one specialty clinic in a small (less than 10,000 in population) rural pain management clinic. A larger population in a more diverse setting would have significantly increased the generalizability of the results.

Implications/Recommendations

The study's findings could be useful to improve opioid prescribing by providers and patients. Patients and providers can judge over time using the pain scale, how opioids have been helpful or not, even if there is opioid misuse or not. For example, instead of following last month's prescription rate, prescribers could follow the actual pain score a patients reports along with their urine toxicology results. Prescribers need to help patients understand the pain scales value for their future of planning of their opioid pain management strategy. Providers can benefit from learning about patients at their individual practice in order to discuss and form new insights for their prescribing practices of opioids. Patients can benefit from this information about their own pain scores improvement or not with opioids, which could influence their further decisions about use. Further, the study supports the idea of finding other ways to support and treat chronic pain patient's pain levels as opioids according to this study only improved around half of its patient's

average daily chronic pain and improvement overall was small. Providers need to help patients manage their expectations of what opioids can do, along with their risks. Moreover, providers need to reconsider providing opioids to those patients where no benefit is occurring and seek new ways of managing of their patient's pain levels. Workers Compensation has the lowest number of high dosage (≥ 90 MED) patients in my study. Further, Workers Compensation is the least likely to pay for high (≥ 90 MED) of daily opioids.

Sustainability

The method of integrating and the gathering of this type of data for the future from a pain management practice that prescribes opioids for chronic pain patients should be done within the IT department or implemented into any IT program. Data such as documented improvement in pain levels, functioning over time with opioids, and urine toxicology results should be assessed by the provider and the patient at each visit.

Conclusions

Concerns within healthcare about opioid prescribing are increasing for patients, prescribers and communities. The CDC (2016) has issued recommended daily dosing levels of opioids for chronic pain management. Higher rates of failed (negative) urine toxicology, which indicates misuse, were not found in the higher dosing group in this study. However, the higher rates of misuse were found in the patients in the low dosing group. This could be possibly explained in that the misuse was caught early in the course of the problem. Possibly, due to frequent enough urine toxicology screenings. Chronic pain patients and providers have concerns about improving pain levels and decreasing risks of opioids. Of 134 patients on opioids for over a year, only 57.5% showed improvement in their pain levels with opioids, though improvements were small.

Many (46.5%) showed no improvement or worsening of their pain levels on opioids. Opioids urine toxicology failure rate was 6.7%. Assessing pain levels and urine toxicology over time, at each visit, by patient and provider while using prescribed opioids is a useful practice. Further research for alternative methods of chronic pain reduction are needed.

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Figure 1

Concept Map for Variables

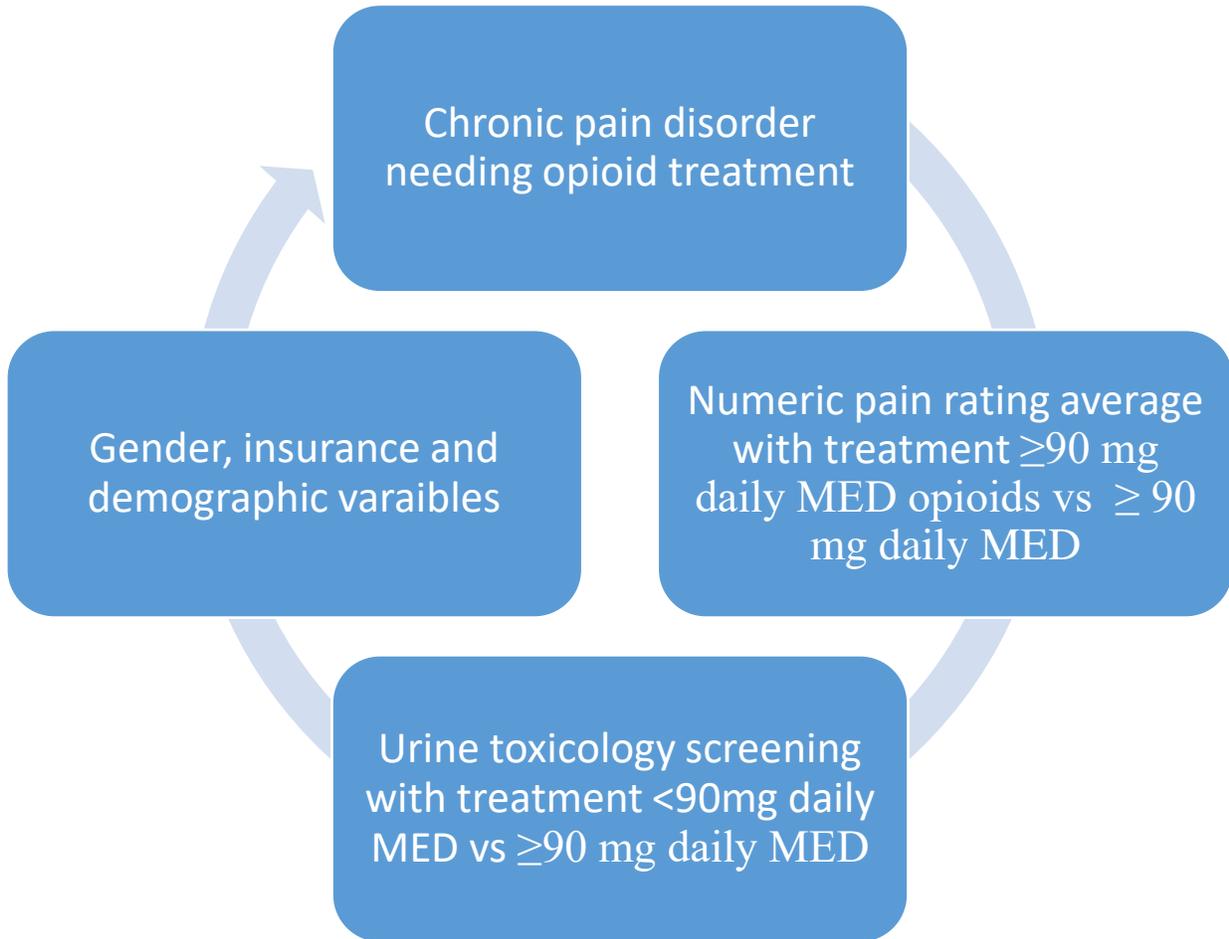
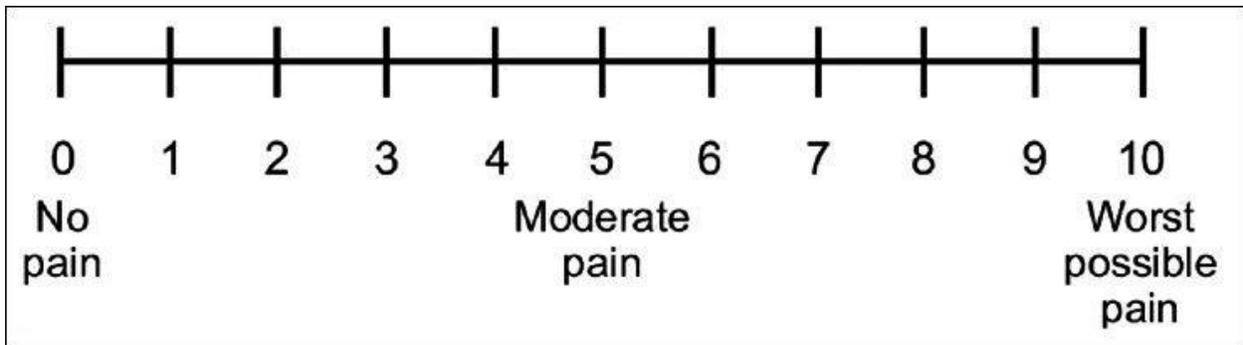


Figure 2

Example of Numeric Pain Rating Scale

Initial Visit- What is your average pain level in the last week?

Follow up visit-What is your average pain level since your last visit?



Source: Personal Communication of Source: Claxton Hepburn Pain Management, May 2017.

Variables

Table 1

Variable	Type of Variable	Theoretical Definition	Operational Definition
<ul style="list-style-type: none"> Opioid Dosing level 	Independent	Morphine Equalization Dosing (MED) is a standard conversion of all opioids to strength of Morphine.	1= < 90mg MED 2= ≥ 90mg MED For one year or more
<ul style="list-style-type: none"> Opioid urine toxicology results 	Dependent -nominal	Ameritox or Dominion Lab urine toxicology screening done yearly, pass means opioid prescribed medications are in the urine and fail means that opioids prescribed are not in urine or illicit or non-prescribed drugs are found in urine testing.	1= Positive (pass) 2= Negative (fail)
<ul style="list-style-type: none"> Initial numeric average pain score 	Dependent- interval	Numeric Pain rating scale 0-10 with 0 being no pain and 10 being worst pain ever.	0-10 scale = actual score
<ul style="list-style-type: none"> Numeric Pain Rating Average Score Since Last Visit 	Dependent-Interval	Numeric Pain rating scale 0-10 with 0 being no pain and 10 being worst pain ever.	0-10 scale = actual score
<ul style="list-style-type: none"> Insurance status 	Demographic-nominal	Patient current insurance status.	1= Medicaid 2= Private 3= Medicare 4=Workers Comp.

<ul style="list-style-type: none"> Actual Age 	Demographic	Chronological age in years	Actual Age
<ul style="list-style-type: none"> Chronic Pain Diagnosis at Visit 	Demographic	Top Disorders seen at Pain Management Clinic	1= Spinal Stenosis-Lumbar, Thoracic, Cervical, 2= Multiple Areas of Arthritis, , 3= Degenerative Disc Disease of Spine, 4=Facet Arthropathy of Spine
<ul style="list-style-type: none"> Gender 	Demographic	Patients biological sex	1=Male 2= Female
<ul style="list-style-type: none"> Ethnicity in Pain Clinic Setting 	Demographic	A person's genetic or biological characteristics.	As recorded by admitting provider 1= Caucasian 2= Non White American

Table 2
Characteristics of the sample

Variables	Total Sample Freq (%)	Low Opioid Dose (n=67) Freq (%)	High Opioid Dose (n=67) Freq (%)	Statistics
Age				$\chi^2=0.465, p=0.793$
18-40	12 (9.0%)	5 (7.5%)	7 (10.4%)	
41-65	95 (70.9%)	49 (73.1%)	46 (68.7%)	
66-81	27 (20.1%)	13 (19.4%)	14 (20.9%)	
Chronic Pain Diagnosis				$\chi^2 = 5.771, p=0.123$
Spinal Stenosis-Lumbar, Thoracic, Cervical	11 (8.2%)	2 (3.0%)	9 (13.4%)	
Multiple Areas of Arthritis	23 (17.2)	12 (17.9%)	11 (16.4%)	
Degenerative Disc Disease of Spine	61 (45.5%)	30 (44.8%)	31 (46.3%)	
Facet Arthropathy of Spine	39 (29.1)	23 (34.3%)	16 (23.9%)	
Ethnicity				*NA
Caucasian	133 (99.3%)	66 (98.5%)	67 (100%)	
Non-white American	1 (0.7%)	1 (1.5%)	0 (0%)	

*Statistical test not performed due to small number of cases in subcategories.

Table 3

Opioid Dosing and Related Variables Hypothesis Testing

	Sample	Low Opioid Dosing	High Opioid Dosing	Statistics
Variables	Total Sample	≤ 90mg MED	≥90mg MED	
	134	67	67	
Urine toxicology				$\chi^2=1.072, p=0.300$
Positive	125 (93.3%)	61 (91.0%)	6 (95.5%)	
Negative	9 (6.7%)	6 (9.0%)	3 (4.5%)	
Pain score First Visit	7.31 (1.758)	7.24 (1.759)	7.39 (1.766)	t= -0.490 p=0.625
Pain Score Recent Visit	6.43 (1.857)	6.21 (1.887)	6.64 (1.815)	t= -1.353 p=0.178
Insurance				$\chi^2=8.915, p=0.030$
Medicaid	43 (32.1%)	19 (28.4%)	24 (35.8%)	
Private	25 (18.7%)	15 (23.9%)	10 (14.9%)	
Medicare	39 (29.1%)	14 (20.9%)	25 (37.3%)	
Workers Comp.	26 (19.4%)	18 (26.9%)	8 (11.9%)	
Gender				$\chi^2=0.749 p=0.387$
Male	71 (53%)	33 (49.3%)	38 (56.7%)	
Female	63 (47%)	34 (50.7%)	29 (43.3%)	

Change with Opioids	Total Sample (n=134)	≤90mg daily opioid dosing	≥90mg daily opioid dosing	Statistics
				$\chi^2=1.596, p=0.953$
≥30% Improvement	32 (23.9%)	17 (25.4%)	15 (22.4%)	
≥20% Improvement	22 (16.4%)	12 (17.9%)	10 (14.9%)	
≥10% Improvement	23 (17.2%)	10 (14.9%)	13 (19.4%)	
0% Improvement	26 (19.4%)	14 (20.9%)	12 (17.9%)	
≤10% Decline	13 (9.7%)	6 (9.0%)	7 (10.4%)	
≤20% Decline	12 (9.0%)	6 (9.0%)	6 (9.0%)	
≤30% Decline	6 (4.5%)	2 (3.0%)	4 (4.5%)	

Significant result is bolded

Appendix A

Data Collection Form

Patient #ID	Opioid Dosing Level 1= <90 mg daily MED 2= ≥ 90 mg daily MED	Opioid Urine Toxicology Results 1= Positive (pass), 2= Negative (fail)	Numeric Pain Rating Average Since last visit 0-10= actual score	Chronic pain Diagnosis 1-4*	Gender 1=M, 2=F	Initial Numeric Pain average on first visit	Insurance Status 1=Medicaid, 2= Private 3=Medicare 4=Workers Compensation	Actual Age in Years	Ethnicity in Pain Clinic Setting-1=Caucasian, 2=Nonwhite American
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*1= Spinal Stenosis- Lumbar, Thoracic, Cervical, 2= Multiple Areas of Arthritis, 3= Degenerative Disc Disease of Spine, 4=Facet Arthropathy of Spine

Appendix B

DATA CODEBOOK

Patient ID Code	1-134
Opioid Dosing Level	1= <90mg daily MED 2= ≥90 mg daily MED
Opioid Urine Toxicology Results	1= Positive (pass) 2= Negative (fail)
Numeric Pain Rating Scale Average Since Last Visit	0-10 scale= actual score
Gender	1= Male 2= Female
Insurance Status	1= Medicaid 2= Private 3=Medicare 4=Workers Compensation
Primary Diagnosis at Visit	1= Spinal Stenosis- Lumbar, Thoracic, Cervical 2= Multiple Areas of Arthritis 3= Degenerative Disc Disease of Spine, 4=Facet Arthropathy of Spine
Initial Visit Numeric Average Pain Score	0-10 scale= actual score
Actual Age in Years	Actual Age

Anonymous Example of a Urine Toxicology Screening Result

Test Date: August 24, 2015

Prescribed Medications:
 Oxycontin 60 mg CR
 Duloxetine 30 mg

Results

Test	Test Method	Test Outcome	Measured Results (ng/mL)
Oxycodone	LC-MS/MS	POSITIVE	22,198
Noroxycodone	LC-MS/MS	POSITIVE	219
Oxymorphone	LC-MS/MS	NEGATIVE	
Duloxetine	LC-MS/MS	NEGATIVE	

Specimen Validity Results

Test	Measured Result	Reference Range
Creatinine (mg/dL)	4	>20 mg/dL
Oxidant (mcg/mL)	0	<200 mcg/mL
pH	3.7	4.5-9.5
Specific gravity	1.002	1.003-1.050

Abbreviated CDC Opioid Dosing Guidelines for Chronic Pain

The screenshot shows a web browser window with the following content:

- Browser Tabs:** CDC Guideline for Prescrib..., Guideline for Prescribing...
- Address Bar:** https://www.cdc.gov/drugoverdose/pdf/Guidelines_Factsheet-a.pdf
- Page Title:** IMPROVING PRACTICE THROUGH RECOMMENDATIONS
- Text:** CDC's *Guideline for Prescribing Opioids for Chronic Pain* is intended to improve communication between providers and patients about the risks and benefits of opioid therapy for chronic pain, improve the safety and effectiveness of pain treatment, and reduce the risks associated with long-term opioid therapy, including opioid use disorder and overdose. The Guideline is not intended for patients who are in active cancer treatment, palliative care, or end-of-life care.
- Section Header:** DETERMINING WHEN TO INITIATE OR CONTINUE OPIOIDS FOR CHRONIC PAIN
- Numbered List:**
 - 1 Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for chronic pain. Clinicians should consider opioid therapy only if expected benefits for both pain and function are anticipated to outweigh risks to the patient. If opioids are used, they should be combined with nonpharmacologic therapy and nonopioid pharmacologic therapy, as appropriate.
 - 2 Before starting opioid therapy for chronic pain, clinicians should establish treatment goals with all patients, including realistic goals for pain and function, and should consider how opioid therapy will be discontinued if benefits do not outweigh risks. Clinicians should continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety.
 - 3 Before starting and periodically during opioid therapy, clinicians should discuss with patients known risks and realistic benefits of opioid therapy and patient and clinician responsibilities for managing therapy.
- Clinical Reminders:**
 - Opioids are not first-line or routine therapy for chronic pain
 - Establish and measure goals for pain and function
 - Discuss benefits and risks and availability of nonopioid therapies with patient
- Image:** A grayscale image of a person's back with a blue circle highlighting the lower back area.
- Footer:** U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. [LEARN MORE | www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html)

The Windows taskbar at the bottom shows the search bar, task view, and several application icons. The system tray on the right shows the time as 1:51 PM on 4/1/2018.