Prescription Opioid Drugs

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Purpose

The purpose of this course is to educate the nurse about the history of opioid drugs, signs of opiod abuse, and signs of diversion as well as guidelines for prescription of opioid drugs and alternate treatments.

Goals

Upon completion of this course, the nurse should be able to:

Introduction

- Describe the timeline of narcotic/opioid use in the United States.
- Explain the 5 levels of the Controlled Substance Schedule.
- Describe the 3 waves of increases in prescription opioid overdose deaths.
- Discuss the 12 CDC recommendations regarding prescriptions of opioids for chronic pain.
- List and describe at least 5 different adjuvant medications.
- List and describe at least 8 different complementary therapies.
- Describe at least 8 indicators of drug-seeking/diversion.
- Describe at least 10 physical and 10 behavioral signs of impairment.
- Describe at least 5 behavioral and 5 workplace signs of diversion.
- Describe the 2 programs of the NJ Board of Nursing for impaired nursing.
- Describe the NJ Prescription Monitoring Program.

Prescription Opioid Drugs

Although opium has a very long history of use for pain control and other purposes, opiates, such as morphine and opium powder, were first widely used to control pain in the United States in the 1860s to relieve the pain of

soldiers injured in the Civil War, but many became addicted to the drug. By 1985, widespread use of morphine and opium powders led to addictions affecting about 1 in 200 people, typically upper-or middle-class white women. In fact, women made up 60% of opium addicts.

In 1898, the Bayer Company promoted the use of **heroin** (a derivative of morphine) as less addictive than morphine, further addicting more people. During the 1910s and 1920s, the United States, in response to increasing addiction and overdose, began to restrict the use of opioids and narcotics, banning opium, requiring prescriptions, and outlawing the use of heroin.

While illegal drug use continued, for many years opioids were prescribed primarily for war injuries, cancer patients, and post-surgical patients while in the hospital. In 1970 the Controlled Substances Act passed, dividing drugs with the potential for abuse into controlled substances schedules. While opiates (morphine and codeine) and opioids are technically different, the term opioid (or narcotics) is now commonly used for both opiates and opioids.

Controlled substance schedule	
Schedule I	No medical use: heroin, peyote, marijuana*
Schedule II	High potential for abuse (narcotics/opioids and stimulants: Hydromorphone, morphine, codeine, hydrocodone, methadone, oxycodone, fentanyl, meperidine, methamphetamine, amphetamine, methylphenidate, pentobarbital, amobarbital, glutethimide.
Schedule III	Lesser potential for abuse (narcotics/opioids and non-narcotics): buprenorphine, acetaminophen with codeine (less than 90 mg per dosage), ketamine, anabolic steroids, benzphetamine, phendimetrazine.
Schedule IV	Low potential for abuse: alprazolam, carisoprodol, chlorazepate, clonazepam, diazepam, lorazepam, triazolam, tramadol, midazolam, temazepam.
Schedule V	Very low potential for abuse: cough preparations with ≤200 mg codeine per 100 mL/100 g,, ezogabine.

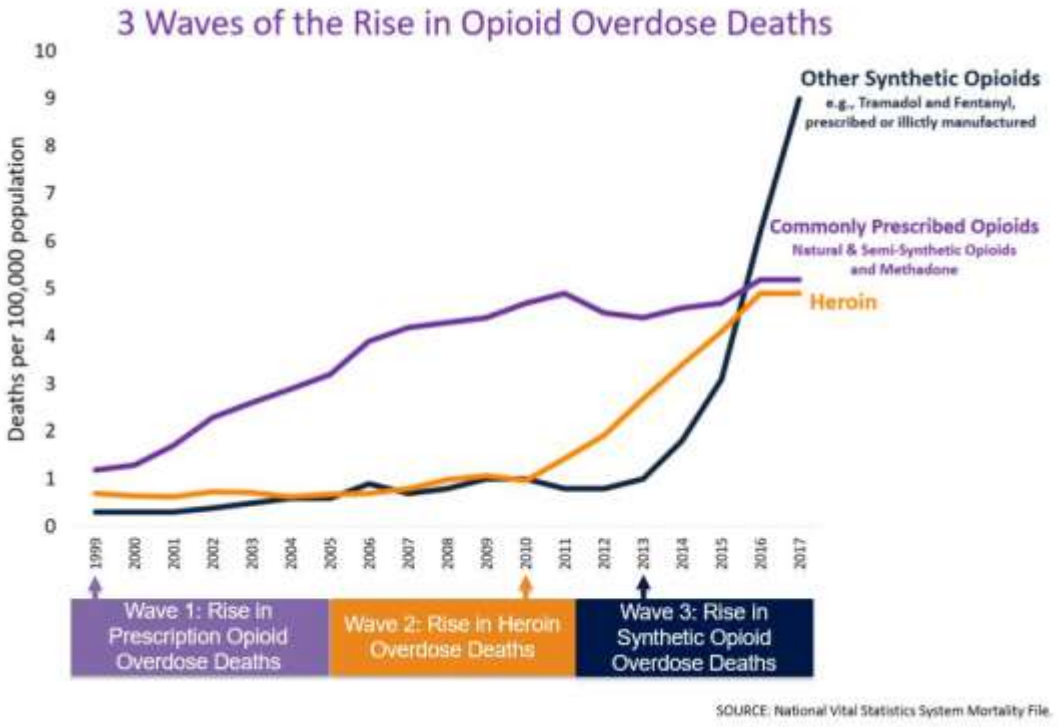
*Note: Marijuana remains a schedule 1 drug despite clear evidence it has some medicinal value and despite many state laws legalizing use for medicinal and/or recreational purposes.

Fentanyl, which is 80 to 100 times more potent than morphine, was approved by the FDA in 1968, and heavily promoted, especially for use in cardiac and vascular surgery. However, when it went off patent in 1981 and prices dropped, sales of the drug increased ten times. From the end of the 1970s and onward, incidents of abuse and overdose became more frequent.

Fentanyl also proved easy to produce and modify illicitly for the street drug market.

In the late 1980s and early 1990s, the use of opioids for the treatment of non-cancer pain increased markedly, with the drug companies that produced and marketed the drugs reassuring the FDA and the medical community that the potential for addiction when the drugs were used for pain control was very low.

The idea that pain "is what the patient says it is" and that patients should be free of almost all pain was promoted as the ideal in pain management. Although there were few studies on the safety of opioid use for non-cancer pain, the drugs were heavily marketed for all types of pain, including chronic pain. By the end of the 1990s, over 85% of patients receiving opioids were receiving these drugs for non-cancer pain.



However, by 1991, the first big wave of deaths from opioid use began, and studies began to show that the drug companies were producing far more drugs than were legally prescribed, essentially fueling the illicit drug trade. In 1995, oxycodone (OxyContin®) was introduced and promoted as less addictive than other drugs, so it was heavily prescribed and, like other drugs, made its way into the streets and addicted more and more people.

Tramadol, which is chemically similar to codeine, was also released in 1995 and marketed as less likely to cause dependency because the clinical trials were based on injectable dosages, but it was manufactured in pill form, which proved to be more potent. Because clinicians believed tramadol was safer and it was not classified as a controlled substance, it was considered an alternative to opioids and again widely prescribed. However, overdoses began occurring. In 2013, 45 million prescriptions for tramadol were written in the United States, doubling the number from 5 years earlier. In 2014, the DEA changed tramadol to a schedule IV designation.

In the early 2000s, overdose deaths continued and by 2010 heroin abuse was on the increase, partially because people addicted to prescription or other illicit drugs switched to heroin because it was cheaper and readily available. In 2013, over 20,000 deaths occurred from fentanyl and related drugs, most illicitly manufactured.

In 2016, the year Prince died from a fentanyl overdose, a fentanyl analogue (carfentanil) which is 100 times stronger than fentanyl and 10,000 times stronger than morphine, was being sold on the streets. That year, over 64,000 people died from drug overdoses in the U.S, with 20,000 attributed to synthetic opioids (primarily fentanyl). Currently, over 130 Americans die each day from an opioid overdose (including both prescriptions and illicit drugs).

Fentanyl poses special problems because one form comes in a patch that contains a 3-day supply of the drug, so if the patch is smoked or the gel inside liquified and injected, the user gets the entire 3-day dosage of the drug, often resulting in death.

Despite concerns about stronger opioids being abused, the FDA recently approved yet another opioid, Dsuvia® (a sublingual tablet form of sufentanil), which is 5 to 10 times stronger than fentanyl.

For many years, prescribing 30-day supplies of narcotics/opioids for acute and chronic pain and routinely renewing the prescriptions was common practice. In response, many states have begun providing regulations and guidelines about the use of controlled substances, with some states requiring that prescriptions be entered into a state-wide database.

CDC recommendations for clinicians g opioids for chronic pain

In 2016, the CDC issued *CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 1016.* The recommendations are intended clinicians of patients with chronic pain other than those receiving active cancer treatment, palliative care, and end-of-life care, but can also apply to patients receiving treatment for acute pain. Chronic pain is defined as pain that lasts more than 3 months or past the time of normal healing in the outpatient setting.

1. Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for chronic pain. Consider opioid therapy only if expected benefits for both pain and function are anticipated to outweigh risks to the patient. If opioids are used, combine with nonpharmacologic therapy and nonopioid pharmacologic therapy, as appropriate.

- Osteoarthritis (knee, hip): Exercise therapy, NSAIDs and acetaminophen
- Low back pain: Exercise therapy and biopsychosocial rehabilitation, NSAIDs, and acetaminophen.
- Diabetic neuropathy: Anticonvulsants (pregabalin, gabapentin, carbamazepine), SNRI (duloxetine).
- Post-herpetic neuralgia: Anticonvulsants and SNRIs.
- Fibromyalgia: Pregabalin, duloxetine.

2. Before starting opioid therapy for chronic pain, establish treatment goals with all patients, including realistic goals for pain and function, and consider how opioid therapy will be discontinued if benefits do not outweigh risks. Continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety.

- Clinically meaningful improvement defined as 30% improvement in scores for both pain and function.

3. Before starting and periodically during opioid therapy, discuss with patients known risks and realistic benefits of opioid therapy and patient and clinician responsibilities for managing therapy.

- Be realistic about benefits of opioids and describe adverse effects and risks to patient and household members.
- Explain responsibilities of patient and clinician to mitigate risks.

4. When starting opioid therapy for chronic pain, prescribe immediate-release opioids instead of extended-release/long-acting (ER/LA) opioids

- Risk of overdose higher in ER/LA opioids.
- Avoid ER/LA for intermittent use.
- Only clinicians familiar with fentanyl and methadone ER/LA and potential risks and able to educate patients and closely monitor them should prescribe these drugs for pain.

5. When opioids are started, prescribe the lowest effective dosage. Use caution when prescribing opioids at any dosage, carefully reassess evidence of individual benefits and risks when considering increasing dosage to ≥50 morphine milligram equivalents (MME)/day, and avoid increasing dosage to ≥90 MME/day or carefully justify a decision to titrate dosage to ≥90 MME/day. [**Note: See Appendix B for equianalgesia table.]**

- A single threshold dosage to eliminate risks of overdose has not been established, but risks are minimized at lower dosages.
- Patients already on high dosages should be apprised of risks, and the clinician should collaborate with patient in lowering the dosage.

6. Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, prescribe the lowest effective dose of immediate-release opioids and prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed.

- The greater the exposure to narcotics/opioids, the greater the risk of long-term use/abuse.

7. Evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. Evaluate benefits and harms of continued therapy with patients every 3 months or more frequently. If benefits do not outweigh harms of continued opioid therapy, optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids.

- Continuing use of narcotics/opioids for 3 months greatly increases risk of opioid abuse disorder.
- Taper recommendations include reducing weekly dosage by 10% to 50% or original dosage or rapid taper over 2 to 3 weeks for those experiencing a severe adverse event, such as overdose.
- Ultrarapid detoxification under anesthesia should be avoided because of risks, including death.

8. Before starting and periodically during continuation of opioid therapy, evaluate risk factors for opioid-related harms. Incorporate into the management plan strategies to mitigate risk, including considering offering naloxone when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages (≥50 MME/day), or concurrent benzodiazepine use, are present.

- Opioids increase risks for those with sleep disordered breathing, pregnancy, renal or hepatic insufficiency, age ≥65, mental health conditions, substance use disorder (including alcohol and illicit drugs), and prior non-fatal overdose.

- Consider offering naloxone when prescribing opioids/narcotics to patients at increased risk.

9. Review the patient's history of controlled substance prescriptions using state prescription drug monitoring program (PDMP) data to determine whether the patient is receiving opioid dosages or dangerous combinations that put him or her at high risk for overdose. Review PDMP data when starting opioid therapy for chronic pain and periodically during opioid therapy for chronic pain, ranging from every prescription to every 3 months.

- State PDMP programs vary and are not always available. Some restrict access to only physicians licensed in the state.
- Discuss PDMP data with patient.
- Avoid concurrent prescriptions of opioids and benzodiazepines.
- Calculate MME/day to assess for overdose risk.
- Discuss concerns about opioid use disorder with patients.

10. When prescribing opioids for chronic pain, use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs.

- Do not dismiss patient from care based on positive urine drug testing as this constitutes abandonment but try to help the patient taper drug use.

11. Avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible.

- Concurrent use of opioids/narcotics and benzodiazepines increases risk of overdose.
- If necessary to taper both drugs, taper opioid first.

12. Offer or arrange evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies) for patients with opioid use disorder.

- If not already trained to prescribe buprenorphine, get training or apply for waiver from SAMHSA.

Adjuvant and complementary therapies

A Cochrane review compared the following drugs and drug combinations for relief of postoperative pain:

- Oxycodone 15 mg,
- Oxycodone 10 mg plus acetaminophen 650 mg,
- Naproxen 500 mg
- Ibuprofen 200 mg and acetaminophen 500 mg

Complementary therapies

Results showed that the ibuprofen plus acetaminophen combination provided the best relief of postoperative pain. This combination is not only as effective postoperatively as opioids but it also has far fewer adverse effects.

Numerous adjuvant medications may be utilized to help control pain, either by themselves or with other medications, such as acetaminophen and/or NSAIDs:

- Anticonvulsants (clonazepam, gabapentin, carbamazapine) are particularly useful for relief of neuropathic pain.
- Calcitonin may provide some relief of bone pain and neuropathic pain.
- Calcium channel blockers (nifedipine) may provide relief of pain associated with neuropathy, ischemia, and spasms of smooth muscles.
- Capsaicin is applied topically to relieve neuropathic pain.
- Diclofenac is a topical NSAID used to relieve pain in the joints (knees, hands, feet) from osteoarthritis.
- Local anesthetics (Mexiletine, lidocaine), usually applied topically, may provide relief for neuropathic pain.
- Tricyclic antidepressants (desipramine, nortriptyline) may provide relief of neuropathic pain and help promote sleep.

Complementary therapies are frequently used to help to relieve pain. The following therapies have demonstrated some benefit:

- Acupressure: Pressure and sometimes electrical stimulation is applied to pressure points (meridians) to relieve pain.
- Acupuncture: Similar to acupressure but small (essentially painless) needles are inserted into the meridians.
- Aromatherapy: Essential oils (such as peppermint and lavender) are vaporized and may help to relax patients and relieve pain.
- Biofeedback: The power of the mind is used to help control body function. The patient is connected to a machine that provides feedback, such as changes in heartrate, in order to reduce stress and provide some relief of pain, such as chronic pain and migraines.
- Cryotherapy: Cold packs reduce swelling and inflammation of joints, reducing pain.
- Distraction: Distracting activities, such as reading or watching TV, may help patients relax patients and change focus away from pain.
- Exercise: Exercises are particularly helpful to reduce pain in the lower back and joints. Yoga, which includes breath control, movement, and meditation, may help to relief chronic pain.

- Heat application: Hot packs may relax muscles and joint stiffness, relieving pain.
- Imagery/Self-hypnosis: Thoughts are redirected away from pain, helping the patient to relax and perceive pain differently.
- Massage: Therapeutic massage may relax painful muscles and joints and interfere with pain messages sent to the brain.
- Music therapy: Listening to music may provide distraction and help to relax the patient.
- Relaxation: Focuses on breathing and relaxing muscles to help to control discomfort and reduce stress.

Drug-seeking behavior

Patients may seek opioids for their own use or to sell to others. They often seek drugs from multiple health practitioners and may use false identification to avoid detection. Drug seekers are often between the ages of 20 and 40 and may appear in a health practitioner's office or emergency department, well-groomed to deflect attention.

However, increasingly older adults seek drugs. Up to 15% of older adults seeking medical care suffer from prescription drug abuse, and the number of American over age 50 abusing prescription drugs is expected to be 2.7 million in 2020 (compared to 910,000 in 2001).

Profile of drug seekers/diverters

- Patient is reluctant to provide identification, such as driver's license.
- Patient states s/he is a visitor to the area and in need of emergency medication or has just moved to the area and has no physician.
- Patient requests pain medication over the telephone or per email.
- Patient requests pain medication when usual practitioner is not available, such as on the weekend when others are covering the practice.
- Patient asks for specific drugs by name and is often adamant that other drugs are ineffective or may claim allergies to other less potent drugs, such as NSAIDs.
- Patient may appear agitated or in a hurry.
- Patient maintains eye contact with practitioner and may try to take control of the interview.

Signs of impairment and impairment of the healthcare provider

- Patient appears knowledgeable about medical terminology and describes needs in medical terms despite lack of medical education.
- Patient may be evasive or inconsistent in answers or tell unlikely stories.
- Patient may avoid follow-up appointment.
- Patient has wounds that inexplicably do not heal.

The behavioral and physical signs of impairment exhibited by addicts (including addicted healthcare workers).

Behavioral signs of impairment	Physical signs
• Personality changes, mood swings. • Underperforms and makes excuses. • Frequent absences and late arrivals. • Shows resentment of authority. • Wears long sleeves even when temperature is high. • Appears visibly intoxicated, high. • Reeks of alcohol or marijuana. • Fails to keep appointments or meet deadlines. • Makes increasing numbers of errors. • Takes longer to carry out tasks. • Has increasing difficulty getting along with family and coworkers. • Refuses drug testing. • Has intense bursts of energy. • Has increasing absences and vague health complaints.	• Chronic rhinorrhea. • Track marks. • Bloodshot eyes. • Poor hygiene. • Weight loss or weight gain. • Slurred or unclear speech. • Hand tremors, muscle fasciculations. • Excessive drowsiness. • Rapid speech. • Sallow skin color. • Frequent diarrhea. • Dilated or constricted pupils. • Frequent nosebleeds. • Insomnia. • Confusion, memory loss. • Tremors.

About 15% of healthcare providers have drug dependence at some point during their professional careers. Healthcare providers who are dependent

on drugs put patients at risk because of impaired judgment and diversion of patients' drugs. Diversion occurs in a number of ways:

- Stealing drugs and falsifying records. For example, a nurse may procure the drug, take it, and chart it as given to the patient or the nurse may fail to dose the patient properly and steal part of the dose.
- Replacing oral opioids with NSAIDs in order to steal oral medications.
- Stealing injection drugs and administering saline or sterile water to the patient. In some cases, nurses have filled syringes with narcotics, given themselves injections, refilled the syringes with NS, and injected the NS back into the vials, sometimes using the same syringes and contaminating the vials.
- Stealing drugs that are to be wasted because they weren't used or because they are expired and to be destroyed.

If a nurse suspects a co-worker of diversion or impairment, the nurse must first ensure that patients are protected by intervening if necessary and immediately report these suspicions to a supervisor. The nurse should avoid confronting the co-worker directly if possible.

Behavioral signs of diversion	**Workplace signs**
• Administers more narcotic drugs than other nurses. • Volunteers to administer drugs to others' patients. • Comes to work early, stays late, volunteers for overtime. • Takes frequent bathroom breaks. • Reports wasting excessive amounts of drugs. • Carries drugs, syringes in pockets. • Increasing personal/professional isolation.	• Narcotics records do not reconcile. • Patients do not appear to have relief from pain medication. • Drug choice and/or dosage is inappropriate for patient's level of pain. • Medications missing. • Medication tampering (broken vials). • Improper storage of injection supplies. • Excessive time spent near drug supply. • Frequent administration of PRN medications. • Failure to document waste. • Fentanyl patches show tampering or disappear.

New Jersey Board of Nursing Programs and Drug monitory program

24/7 Crisis Hotline for Impaired Nurses: 1-800-662-0108

Recovery and Monitoring Program (RAMP) This is a confidential voluntary program contracted through the NJ Board of Nursing as an alternative to discipline program before the impairment harms a patient. Nurses may self-refer or referrals may be accepted from the licensing board, employers, and other sources. Referrals are confidential as well. The primary goals of the program are to ensure nurses practice safely, to protect the public, and to protect the nurse.

The nurse must fill out an application and sign a monitoring agreement. Participants must agree to:

- Refrain from practice until approved for work.
- Seek evaluation/treatment.
- Comply with individual monitoring and return to work contracts.
- Attend peer support groups.
- Participate in 12-step recovery programs with a sponsor.
- Have randomized drug screening and daily monitoring.

The NJ Board of Nursing is notified when the referral is made, and the initial evaluation may take up to 90 days, during which the nurse does not have to disclose participation to employers but must check in with RAMP every day. Once accepted into the program, the nurse must disclose participation to employers. Participation in the program may continue for up to 5 years.

Monitoring requirements and work restrictions may vary. For example, some may be required to stop working for a time, others may have restrictions on hours of work, medication administration, and specialty or place of employment. Upon return to work, the human resources department and supervisor will be made aware of the nurse's participation in RAMP.

Insurance does not cover the costs of the program itself, which may include lab fees as well as fees for evaluation, peer group, and therapists. Some insurance policies may cover some costs for therapists and lab testing, but fees must be paid in advance, and drug screening costs can be expensive.

NJ Prescription Drug Monitoring Program

Nurses who do not comply with the program and/or drop out are reported to the Board of Nursing for disciplinary action, which may result in loss of license.

This statewide database collects information about prescription of controlled dangerous substances (schedule II) and human growth hormone dispensed in outpatient settings and by out-of-state pharmacies that dispense in New Jersey.

Prescription must be reported within one business day after the prescription was dispensed. Pharmacies must file daily reports. Access is granted to prescribers, delegates, and pharmacists licensed by NJ and in good standing.

Prior to issuing a prescription, the prescriber must access prescription monitoring information (prescription history) for both new and current patients and then every 3 moths while the patient receives a schedule II drugs.

Opioids have been over-prescribed and over-used to the point that the treatment is often worse than the underlying condition. Rates of addiction and overdose have skyrocketed in recent years, resulting in many thousands of deaths from overdose. Healthcare providers are at risk of abusing prescription drugs because of easy access and high stress positions. Nurses should be aware of the signs of addiction and diversion of drugs.

General guidelines for pain management and use of prescription opioids includes:
1. Mild to moderate pain should be treated with a combination of acetaminophen 500mg and ibuprofen 200 mg.

2. Most acute pain control should begin with acetaminophen, NSAID, or a combination and an opioid prescribed only if relief is inadequate.

3. Opioids for severe acute pain should generally be limited to a 3-day supply and rarely greater than 7 days.

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3. Non-cancer chronic pain should be treated with adjuvant medications and complementary therapies.

4. Pain control should focus on achieving 30% reduction of pain and increase in function.

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Appendix A: Equianalgesia

Equianalgesia (Morphine used as basis for comparison)		
Drug	**Parenteral**	**Oral or other**
Morphine sulfate (MS)	**10 mg IV q 3-4 hrs**	**30 mg q 3-4 hr2**
MS controlled release	NA	90-120 mg q 12 hrs.
MS extended release	NA	180-240 mg q 24 hrs.
Hydrocodone	NA	30 mg q 3-4 hours
Hydromorphone	1.5mg q 3-4 hrs	7.5 mg q 3-4 hrs
Fentanyl	100 mcg q hr	Patches: 25, 50, and 75 mcg/hr patch every 72 hours (adults) Transmucosal: 200 mcg. Buccal: 100 mcg.
Levorphanol	2 mg q 6-8 hrs.	4 mg q 6-8 hrs.

Meperidine	300 mg q 2-3 hrs. (Note: usual dose is 50-150 mg q 3-4 hrs,	300 mg q 2-3 hrs (Used most often for shivering but not for analgesia)
Oxycodone	NA	20-30 mg q 3-4 hrs.
Oxycodone controlled release	NA	40 mg q 12 hrs.
Codeine	130 mg q 3-4 hrs.	180-200 mg q 3-4 hrs.
Methadone	5-10 mg q 6-8 hrs.	10-20 mg q 6-8 hours.