



Expected Practices

Specialty: Pain Workgroup

Subject: Post-Operative and Nociceptive (Traumatic) Acute Pain in Adults and Pediatric Patients

Date: November 14, 2017

Purpose: Safe use of Controlled Substances in Acute and Post-Surgical Pain in Adult and Pediatric Patients

Target Audience: Primary and Specialty Care Providers

Expected Practice:

DHS providers have a professional responsibility to prescribe controlled substances appropriately, guarding against unintentional drug dependence, while striving to minimize short term and long term suffering and health risks. Pain cannot always be avoided or eradicated. Sometimes pain interferes with recovery; sometimes pain treatment leads to serious health consequences.

This *Expected Practice* seeks to guide all prescribers treating patients with acute pain to treat the whole patient in a way that will promote a healthy recovery.

With appropriate pain management, following prescription of opioids for *acute* pain, the incidence of patient progression to recurrent episodic opioid use occurs in 21% and chronic dependency in 6% of patients. (1)

Pain management will necessarily differ based on the magnitude of the invasive procedure, and this EP does not address every situation. Individual clinician judgment will be needed to help the patient cope with major post-procedural and other acute pain.

Addiction and dependence are common side effects of prescription opioids. Before prescribing opioids the risk and benefits should be discussed with patients, a plan for stopping opioids should be in place, and documentation of the need for controlled substances should be documented in the patient chart.

This *Expected Practice* was developed by a DHS Specialty-Primary Care Work Group to fulfill the DHS mission to ensure access to high-quality, patient-centered, and cost-effective health care. SPC Work Groups, composed of specialist and primary care provider representatives from across LA County DHS, are guided by 1) real-life practice conditions at our facilities, 2) available clinical evidence, and 3) the principle that we must provide equitable care for the entire population that LA County DHS is responsible for, not just those that appear in front of us. It is recognized that in individual situations a provider's clinical judgment may vary from this *Expected Practice*, but in such cases compelling documentation for the exception should be provided in the medical record.

All patients, including those with substance use disorders (SUD) and/or suffering from opioid dependency side effects should be treated in a compassionate and non-stigmatizing environment. However, it is also important to address the increased risk for prescription drug dependency in patients with a history of SUD, and plan for closer monitoring of the patient's progress.

Integrated healthcare management should be the goal, utilizing the expertise of the healthcare team, including counselors (psychology, social work), rehabilitation therapists (Occupational and Physical therapy, Recreation Therapy), peer counselors, nurses, Wellness Center staff, and others.

Summary

PRE-OPERATIVE

Goal: stop drug dependence before it starts and help the patient regain health and functionality.

- Emphasize that pain is likely to occur perioperatively, and the goals will include having the patient and clinician develop a plan that will lead to the healthiest and most rapid recovery.
- Discuss with patient the role of non-pharmacologic, non-opioid, and opioid treatments, and overall health and functional goals.
- Identify risk factors for developing opioid related aberrant behavior, including personal history of substance abuse and family history of substance abuse.
- Identify risk factors for opioid complications including sleep apnea, chronic renal disease, hepatic insufficiency, chronic obstructive pulmonary disease, and gastrointestinal disorders such as significant constipation.
- Risk assessments are individualized and the clinician should make shared decisions with the patient concerning the pain management plan.
- Attempt to taper chronic opioids used for chronic pain.
- If patient is on methadone or buprenorphine for Opioid Use Disorder, additional discussion may be needed with anesthesia or inpatient medicine consult team.

What if we do not have an integrated care team at our facility? DHS resources include local allied healthcare professionals, Wellness Centers, Primary Care Providers who have sought additional training in pain management and addiction. eConsult also provides access to DHS clinicians who are available to review treatment strategies.

What if we do not have access to services which train the patient to use techniques such as 'distraction', 'non-catastrophizing', 'motivational interviewing', and other evidence based strategies which can help patients overcome pain without medication? Clinicians and patients can review "Pain Coping Strategies" as presented in the following videos. This is an evidence based program of non-pharmacological treatments for managing pain while allowing patients to decrease opioid dependence. Though the reference citation is for managing chronic pain, these strategies are also useful in acute pain. (2)

Members of the perioperative/acute pain team should review these videos. Links to videos reviewing these strategies are provided in Appendix D.

ACUTE POST-OPERATIVE

- Suggest that the clinician first try non-opioid pharmacologic interventions and recognize the value of non-pharmacologic treatment options.
- Aim for a 3 to 4 out of 10 on pain scale; clarify to the patient that all pain cannot be eradicated.

- Consider adjunctive therapies: physical, occupational, recreation, and cognitive-behavioral therapies, and other approaches that promote mobility and patient engagement.
- Clinicians and patients can review “Pain Coping Strategies” videos as outlined in Appendix D.
- Promote early mobilization, use ice packs, and warm packs.
- Schedule Acetaminophen 1gm PO QID around the clock (because of potential hepatotoxicity, 500mg PO TID can be used in patients with cirrhosis, and daily dose of up to 2-3 grams may be tolerated but hepatic function must be monitored).
- Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) may be safer than opioids: 400 mg PO ibuprofen QID (dose adjust if renal disease, use caution if there is hepatic disease).
- Consider role for topical agents, e.g. lidocaine, voltaren.
- If opioid treatment is determined by the clinician to be best for the patient:
 - Use lowest dose, for fewest days.
 - Use scheduled short acting PO > PRN PO > IV PCA > IV RN controlled.
 - Transition to PO opioids as soon as possible from IV.
- Where available, multimodal management of perioperative pain with regional/neuro-axial anesthesia can reduce use of systemic pain medications, during and after surgical procedures and should be employed.

HOME PAIN CONTROL

- Engage rehabilitation therapy if available, and encourage and early mobility.
- Prescribe oral acetaminophen and topical treatments such as such as diclofenac or lidocaine.
- For patients with adequate hepatic function, NSAIDs should also be used.
- For patients with cirrhosis maximum daily doses of 2-3 grams of acetaminophen can be used, but hepatic function must be monitored.
- Every effort should be made to limit opioid treatment to less than 5-7 days although depending on the extent of surgery, pain treatment may need to be extended by the surgeon and must be guided by the clinician’s judgment. The ultimate duration of post-operative opioid use will vary with the type and magnitude of the surgery. The surgical team is responsible for weaning patients off of post-operatively prescribed opiates or to the patient’s preoperative baseline levels as soon as reasonably possible. (Please see Appendix C for review of selective annotated bibliography relevant to these issues.)
- For longer duration of use for opioids, it is important document clinical reasoning for extended use, which may include complications or re-operation.
- Extra caution should be exercised when prescribing home opioids for patients with a history of SUD, older than 60 years of age, renal or hepatic disease.
- Avoid starting long acting opioids for post-operative pain.

Non-Opioid Treatment Options

- The treating clinician and the patient should recognize and discuss: elimination of all pain may not be a possible treatment goal. For non-terminal pain, treatment of pain scores to levels below 3/10 with opioid medications increases the risk of over-sedation, respiratory depression and sudden death.^{19,20}
 - Clarify, diagnose, and document the condition being treated.
 - Recognize the value and communicate to you patient the value of non-pharmacologic/multi-modal pain management:^{2,3 5, 6, 10}
 - Mindfulness: Psychosocial Support/Cognitive Behavioral Therapy
 - Have members of the clinical team and the patient review “Pain coping strategies” videos (appendix D)
 - Consider Social Work or Community Health Worker for resource linkage

- Manual Therapy: massage, hot-cold compress
 - Movement: Physical/Occupational Therapy, Physiatry
- Clinician judgment is always needed, but use of non-opioid medication as first line pharmacological intervention is recommended:
 - Acetaminophen is recommended in acute pain even in patients with CKD and cirrhosis (see appendix A).
 - Ibuprofen plus acetaminophen provides effective pain relief for 70% of serious acute pain.
 - Topical lidocaine and voltaren are on formulary.
 - For neuropathic, centralized pain syndromes consider: Serotonin Norepinephrine Reuptake Inhibitors (SNRIs) and tricyclic anti-depressants, gabapentin, baclofen, tizanidine

Short Acting Opioid Q4-6h (IR) formulary, usual starting dose:

- The following formulations have the same 10 mg Morphine Milligram Equivalency:
 - Acetaminophen/Codeine 300mg/30mg 3 tabs PO
 - Hydrocodone/ Acetaminophen (Norco 10/325mg) PO
 - Oxycodone/ Acetaminophen (Percocet 7.5/325mg) PO
 - Hydromorphone 2mg po
 - Morphine 3mg IV
 - Hydromorphone 0.5mg IV

Long Acting Opioid Starts – see equianalgesic conversion calculators, reduce by at least 25% for cross reactivity:

- Morphine (MS Contin) usually 15mg Q12
- Transdermal fentanyl is 80 times more potent than morphine. Use only in chronic opioid conversions.
 - Titrate every 3-6 days, due to very long half-life. Remove old patch. Lowest dose 12mcg/hr patch Q3days. Indicated only for patients who are opioid tolerant for 1 week or longer, on at least 60 mg/day PO morphine equivalents.

***Opioid Typical taper:** if on chronic opioids for >1 month. Taper weekly by 10-20% of original dose until 20% remains. For remaining 20%, taper 5-10% of original dose each week. Most people can stop short course opioids, without titration. For a rapid taper, reduce by 25% every 3–7 days, depending on drug half-life.

Appendix A: Liver and Renal impairment

| | |
|-----------------------------------|--|
| Medications in Cirrhosis | |
| NSAIDs in Cirrhosis | Avoid or use shared decision making. Risk of GI bleeding, drop in platelet count, and renal dysfunction. |
| Acetaminophen in Cirrhosis | Clinician judgement must prevail, but suggest limit to less than 2-3 gm/day but hepatic function must be monitored. |
| Opioid in Cirrhosis | Use sparingly due to risk of encephalopathy. If using morphine or hydromorphone, decrease dose 50%. There is a prolonged half-life in cirrhosis. |

| | NSAID in CKD²¹ | Notes on opioids |
|---------------------------------------|--|--|
| CKD 1 | First line, any NSAID, no dose change | Universal precaution |
| CKD 2 GFR > 60 | Benefit > Risk. Transient effects on GFR. <i>Universal precautions:</i> Shortest duration. Avoid w ACE-I, elderly, hypotension | Universal precaution |
| CKD 3-4 (GFR 15-60) | Avoid NSAIDs, Shared decision | Universal precaution. High risk. Limit to Hydromorphone –0.5 mg PO q 4h + 0.5 mg PRN q 2h for breakthrough |
| Nondialysis CKD 5 (<15) | Avoid NSAIDs. Shared Decision | Universal precaution. High risk. Hydromorphone as above |
| Dialysis CKD 5 | Ibuprofen is dialyzable. No toxic metabolites. OK for Short term, low dose as not concerned about renal protective status in ESRD Avoid in Acute Renal Injury | Universal precaution. High risk. Limit to Hydromorphone. Morphine is OK, as dialyzable. |

Appendix B: Recommended Universal Precautions for Opioid Treatment Options

- **Check CURES upon all initial prescriptions and refills**
 - Senate Bill No. 482 requires all healthcare providers to check the CURES prior to the first-time prescribing of schedule II-IV medications and at least once every four months thereafter when the medication remains part of the patient's treatment
 - DHS Expected Practice is to check before each prescription

- **Be aware of pre-operative concurrent/overlapping pain syndromes and patterns of prior opioid use**
 - Consider previously non-diagnosed or undertreated chronic pain syndrome or substance use disorder in patients with aberrant behaviors.
 - Assess for risk of opioid use disorder, consider one question screen "How many times in the past year have you used an illegal drug or used a prescription medication for nonmedical reasons?" >0 = positive 100% sensitive and 73.5% specific for drug abuse.
 - Evaluate for pre-operative prescribed opioid use patterns by documenting review of CURES. Patients receiving opioids before surgery have an increased risk for an adverse event by 34% (3).

- **Evaluate for peri-operative opioid risk factors for respiratory depression, patient and iatrogenic. Caution in using opioids with**
 - Concurrent use of sedatives/hypnotics. When possible, avoid concurrent sedative/hypnotic e.g. benzodiazepine use.^{3, 5, 17}
 - Risk of disordered breathing: BMI > 30, OSA, COPD, CHF, anatomic airway abnormality.
 - Risk of metabolic clearance disorders: hepatic or renal impairment.

- **Minimize opioid dose whenever feasible^{5, 17}**
 - Limit use of opioids as a adjunctive therapy, for short duration.^{3, 4, 6, 7, 17}
 - Calculate and minimize Morphine Equivalents per Day (MED)
 - The maximum daily oral dose recommended for opioid-naïve, acute pain patients based on risk of overdose/death is 30-50mg morphine equivalent dose (MED)
 - CDC recommends avoid prescribing ≥ 90 mg MED¹⁷

- **Minimize the duration of opioid medications to 5-7 days**
 - The probability of chronic opioid use begins to increase after the third day¹⁸
 - Prescribing more than 7 days of opioids and/or authorizing a second opioid refill roughly doubles the chances of continued use 1 year later.¹⁸
 - There is no clear evidence for longer course of opioids for improving pain control or outcomes.
 - Clear communication of post-operative pain expectations is shown to reduce need for long duration of opioids

- **Oral opioids are recommended over IV opioids^{5, 7}**

- **Use at most ONE long acting opioid and ONE short acting opioid**
 - Use online equianalgesic calculations (<http://clincalc.com/opioids/>) to convert multiple opioid agents into morphine equivalent doses of formulary agent using a 25-50% reduction for cross tolerance.

- Use immediate release formulations instead of extended release/long acting when beginning opioids¹⁷ Patients initiated on long acting formulations had the highest probabilities of long term use.¹⁸
- **Co-Prescribe Naloxone for high risk patients such as those with**
 - A current prescription for muscle relaxant or sleeping medication
 - A history of taking opiates chronically already for pain or pleasure
 - A history of injecting opioids
 - A history of overdosing on any type of substance prescription or illicit
 - Known hepatic or renal impairment
 - Known disordered breathing, COPD, sleep apnea
- **Patients with opioid use disorders (OUD) deserve quality pain management**
 - Limited use of opioids is an option for patient with OUD, but critical weighing of harms and benefits should be discussed and documented in your chart.
 - Recognize and treat opioid withdrawal in hospitalized patients with OUD. Treat opioid withdrawal with non-opioid therapy or with buprenorphine containing medication.
 - Do not use opioids as a contingency management strategy to engender patient cooperation or adherence. Provide appropriate feedback and rewards to patients that do not further trigger opioid dependency.

Appendix C: Annotated Bibliography by the DHS Surgical and Perioperative Work Groups

22. Schoenfeld AJ¹, Nwosu K, Jiang W, Yau AL, Chaudhary MA, Scully RE, Koehlmoos T, Kang JD, Haider AHJ.. Risk Factors for Prolonged Opioid Use Following Spine Surgery, and the Association with Surgical Intensity, Among Opioid-Naive Patients. *Bone Joint Surg Am* 2017 Aug 2;99(15):1247-1252.

The authors sought to address the concern that the use of prescription opioids following surgical interventions, including spine surgery, may predispose patients to chronic opioid use and abuse; they examined the proportion of patients using opioids up to one year after spinal surgeries. The study used 2006-2014 data from TRICARE insurance claims. This study included 9,991 patients. Eighty-four percent filled at least 1 opioid prescription on discharge at discharge from hospital. At 30 days following discharge, 8% continued opioid use; at 3 months, 1% continued use; and at 6 months, 0.1%.

Socioeconomic status, and pre-existing mental health disorders were associated with sustained opioid use following spine surgery. Less invasive procedures were associated with less opioid use.

“LEVEL OF EVIDENCE: Therapeutic Level III”

23. Scully RE, Schoenfeld AJ, Jiang W, Lipsitz S, Chaudhary MA, Learn PA, Koehlmoos T, Haider AH, Nguyen LL. Defining Optimal Length of Opioid Pain Medication Prescription After Common Surgical Procedures. *JAMA Surg*. Published online September 27, 2017.

The authors sought to describe patterns of opioid pain medication prescriptions after common surgical procedures and determine the appropriateness of the prescription as indicated by the rate of refills. The Department of Defense Military Health System Data Repository was used to identify opioid-naive individuals 18 to 64 years of age who had undergone 1 of 8 common surgical procedures between January 1, 2005, and September 30, 2014. The adjusted risk of refilling an opioid prescription based on the number of days of initial prescription was statistically modeled. 215,140 individuals were studied. The median prescription lengths were 4 days for appendectomy and cholecystectomy, 5 days for inguinal hernia repair, 4 days for hysterectomy, 5 days for mastectomy, 5 days for anterior cruciate ligament repair and rotator cuff repair, and 7 days for discectomy. The authors concluded that this range of prescription duration was recommended for the procedures studied.

24. Laufenberg-Feldmann R, Kappis B, Mauff S, Schmidtman I, Ferner M. Prevalence of pain 6 months after surgery: a prospective observational study. *BMC Anesthesiology* (2016) 16:91
- The authors state: “In contrast to other studies, we evaluated prevalence and intensity of pain 6 months after surgery in combination with the need for pain medication. We assumed that after joint and back surgery, pain symptoms would improve continuously so that a regular intake of analgesics could be avoided. However pain intensity and pain duration differed between surgical procedures in our study. Especially patients undergoing back or joint surgery appeared to be impaired due to pain up to 6 months postoperatively. Consequently, in our sample, about 40 % of the patients after back surgery reported the intake of analgesics 6 months post-surgery, and 13.6 % of these patients even indicated the intake of opioids on a regular basis. These results are unexpected and show an unsatisfying result of the surgical intervention in terms of pain reduction.” They conclude: “ In conclusion, these data reveal that a significant number of patients suffers from pain and need analgesic medication, even opioids, up to 6 months after surgery. The treatment of ongoing pain after surgery is still an important challenge. The need of preventive therapies should be considered for example in patients with neuropathic pain or patients with chronic opioid use. Besides the evaluation of predictive factors for ongoing postoperative pain and the identification of patients at risk, the improvement of postoperative pain management strategies after discharge should be subject of further research.”

Appendix D: Evidence-based Program of Non-pharmacological Treatments

- 01 Pain Coping Skills Training Introduction TRT 6:05 video: <https://youtu.be/cHWiz2nnqQk>
- 02 Pain Coping Skills Training Course Intro and Overview TRT 42:10 video: <https://youtu.be/DLtNvUWjwxE>
- 03 Rationale Gate Control Theory TRT 13:52 video: <https://youtu.be/DEjWolzU-4>
- 04 Progressive Muscular Relaxation TRT 31:32 video: <https://youtu.be/gxiotZ9d0gs>
- 05 Progressive Muscular Relaxation Feedback and Summary TRT 20:55 video: https://youtu.be/McXSqWl_RKA
- 06 Mini Practice Modeling TRT 18:59 video: <https://youtu.be/NMHX2MeDs1g>
- 07 Mini Practice Feedback and Summary TRT 19:49 video: <https://youtu.be/qUpoykEXJZo>
- 08 Activity Rest Cycle Modeling TRT 18:11 video: <https://youtu.be/QdljybiJLXQ>
- 09 Activity Rest Cycle Feedback and Summary TRT 17:59 video: <https://youtu.be/ygyHkxHhsm4>
- 10 Pleasant Activity Scheduling TRT 18:57 video: <https://youtu.be/PgqUVKPe70A>
- 11 Pleasant Activity Scheduling Feedback and Summary TRT 11:56 video: <https://youtu.be/RZl1dRyRZZA>
- 12 Concepts of Motivational Interviewing TRT: 1:33:13 video: <https://youtu.be/yeryt7Jl7Uo>
- 13 Brief Action Planning Overview TRT 20:10 video: <https://youtu.be/TXLuVDsrLEk>
- 14 Brief Action Planning Modeling TRT: 10:54 video: <https://youtu.be/AInzlbPGwEM>
- 15 Brief Action Plan Feedback and Summary TRT 7:52 video: https://youtu.be/4Z_TmpvH9u8
- 16 Problem Solving Modeling TRT 25:50 video: <https://youtu.be/32lj2dEER00>
- 17 Problem Solving Feedback and Summary TRT: 9:19 video: <https://youtu.be/pywh6xW5wyQ>
- 18 Real World Application TRT: 32:28 video: <https://youtu.be/OPSUIEPLhZc>

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