Caring for Chronic Pain within Addiction Treatment

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The Current Opioid Crisis: Iatrogenic

MMWR 11/4/11
Prescription Opioid Epidemic Has Peaked
Peak Opioid MME in US 782 (2010); 2015 = 640
What is the risk of opioid addiction among individuals prescribed opioids for pain?

Rates of misuse 12-29% (95% CI: 13-38%)

Rates of addiction 8-12% (95% CI: 3-17%)
The Opioid Crisis: Public Health Response
Reduce Opioid Exposure through Opioid Prescribing Guidelines
Figure 1. Source of prescription pain relievers for the most recent nonmedical use among past year users aged 12 or older: annual averages, 2013 and 2014

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHS), 2013 and 2014.
Guidelines Decrease Prescribing

Focusing on MME (or dose) reduction mirrors early epidemic focus on achieving lower pain score.

**Figure 1**: Number of opioid-acetaminophen prescriptions greater than 200 pills per prescription by month.

**Figure 2**: Opioid prescribing greater than or equal to 120 morphine milligram equivalent per day, per 1000 members per month.
Opioid Prescribing Guidelines

Opioid Refugees
Opioid Over Prescription

Opioid Misuse

Opioid Use Disorder

Opioid Overdose
Addiction (?) in individuals with chronic pain

Opioid Taper

Non-Adherent with Taper

Refer to Addiction Provider
Addiction (?) in individuals with chronic pain

- Screen for Addiction
- Refer for Treatment
- Opioid Taper
  - Negative
  - Positive
**Brief Intro to Pain Physiology**

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**Exhibit 1-3 Pain Types**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nociceptive Pain</td>
<td>Pain that results from suprathreshold stimulation of nociceptors, which are neural receptors specialized for the detection of potentially harmful situations. This is an adaptive function of the nervous system. Nociceptors can be excited by mechanical, thermal, or chemical stimulation. The immediate physical response is reflexive and protective, causing a person to pull a hand away from a hot surface, for example. Nociceptive pain persists while the injurious agent remains or until healing occurs. Prolonged nociceptive input can cause central hypersensitization and the experience of spontaneous or amplified pain.</td>
</tr>
<tr>
<td>Neuropathic Pain</td>
<td>Pain that results from lesion or dysfunction of the sensory nervous system. A compressed, injured, or severed nerve can trigger neuropathic pain, as can disorders that affect the neural axis (e.g., metabolic diseases, infections, autoimmune disorders, vascular diseases, neoplasia [Campbell &amp; Meyer, 2006]).</td>
</tr>
<tr>
<td>Mixed Nociceptive/Neuropathic Pain</td>
<td>A combination of the two types of pain. For example, patients with degenerative disc disease may suffer from mechanical (nociceptive) back pain and radicular (neuropathic) pain.</td>
</tr>
</tbody>
</table>

**Nociceptive vs Neuropathic Pain**

- **Nociceptive Pain**
  - Caused by activity in neural pathways in response to potentially tissue-damaging stimuli
- **Neuropathic Pain**
  - Initiated or caused by primary lesion or dysfunction in the nervous system

**Mixed Type**

- Caused by a combination of both primary injury or secondary effects

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- **Postoperative pain**
- **Mechanical low back pain**
- **Sickle cell crisis**
- **Sports/exercise injuries**
- **Neuropathic low back pain**
- **Neuropathic pain**
  - Distal polyneuropathy (eg, diabetic, HIV)
  - Central post-stroke pain
  - Complex regional pain syndrome
  - CRPS
  - Trigeminal neuralgia
  - Postherpetic neuralgia
  - Arthritis
Pain and SUD (MOUD)

- Polysubstance use
- Altered nociocpetion threshold
- Physical dependence/tolerance
- Opioid-induced Hyperalgesia
Acute Pain Should Be Treated

- MOUD is NOT analgesia
- People w MOUD have tolerance, likely need more analgesia
- Multi-modal therapy preferred
- If opioids used: oral over IV
- If opioid PCA: avoid basal infusion

Consensus Statement: American Pain Society, ASRA and the American Society of Anesthesiologists
MOUD versus Analgesia
Daily versus Split Dosing

• Analgesic effect: 6-8 hours (Bup and Methadone)
• Therefore Split Dosing
• However: Split dosing not possible from OTP
Still Taking Buprenorphine
- Surgeons should contact the physician prescribing buprenorphine and ensure that he or she is aware of surgery
- Continue the buprenorphine for postoperative pain
- Do NOT routinely prescribe supplemental opioids
- Consider adjuncts – acetaminophen and/or NSAIDs

Off Buprenorphine
- Assess the amount of time since last dose of buprenorphine
- If ≥5 days off buprenorphine, treat with traditional opioids; may require tolerant or highly-tolerant doses
- Surgeons should contact the physician prescribing buprenorphine and ensure that he or she is aware of surgery
- After postoperative pain normalizes, the patient may work with his or her physician to reinstate buprenorphine therapy

Still Taking Buprenorphine
1. Discontinue buprenorphine
2. Start PCA – Will likely require high doses; may require some continuous opioid infusion. However, would avoid high-dose, continuous opioids and instead allow the patient to use PCA. Consult APS. PCA to be managed by Acute Pain Service (APS).
3. Patient should be in a monitored setting with close nurse monitoring (ICU, or monitored/moderate care setting)
   - Duration of ICU/monitored setting time will vary
   - Acetaminophen around the clock (ATC)
   - Consider gabapentin or pregabalin
4. Regional anesthesia – consider continuous catheters
5. Maximize adjuncts
   - Dexmedetomidine for ICU patients used according to ICU protocols
   - Acetaminophen around the clock (ATC)
   - Consider gabapentin or pregabalin

Off Buprenorphine
- Anticipate patient’s course to be similar to tolerant patient
- Surgeons should ensure appropriate outpatient follow-up
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Suggested Phrasing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validate patient’s pain and</td>
<td>“I know that you’re in pain and you’re worried. We will do our best for your pain.”</td>
</tr>
<tr>
<td>frustration/fear/other emotions.</td>
<td></td>
</tr>
<tr>
<td>Review the data objectively.</td>
<td>“I see that you are able to function better and sleep better than before.”</td>
</tr>
<tr>
<td>Set clear limits when responding to requests</td>
<td>“Our standard for all patients is to not give IV medication for people who are able to take pills”</td>
</tr>
<tr>
<td>for inappropriate intravenous opioids which</td>
<td>“It is not so important how we get the opioid into your body. What is more important is the right amount at the right time. Though IV may seem stronger it is really only faster but it will also wear off sooner than oral medicine. Oral medicine will give you more steady pain control.”</td>
</tr>
<tr>
<td>are not indicated.</td>
<td></td>
</tr>
</tbody>
</table>
REVIEW AND PRESIDENT’S

Table 1  Prevalence of sequelae associated with chronic pain

<table>
<thead>
<tr>
<th>Source</th>
<th>Condition</th>
<th>Chronic Pain (%)</th>
<th>Control (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gureje et al., 1998</td>
<td>Anxiety or depressive disorder</td>
<td>33.7</td>
<td>10.1</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Ohayon et al., 2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Von Korff et al., 2005</td>
<td></td>
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<td></td>
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<tr>
<td>Kinney et al., 1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ratcliffe et al., 2008</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Table 3  Effects of pain control on various aspects of patient health

<table>
<thead>
<tr>
<th>Measure</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increased duration of sleep</td>
<td></td>
</tr>
<tr>
<td>• Improved overall sleep quality</td>
<td></td>
</tr>
<tr>
<td>• Sleep continuity</td>
<td></td>
</tr>
<tr>
<td>• Sleep architecture</td>
<td></td>
</tr>
<tr>
<td>• Composite pain</td>
<td></td>
</tr>
<tr>
<td>• Sleep index score</td>
<td></td>
</tr>
<tr>
<td>• Less trouble falling asleep</td>
<td></td>
</tr>
<tr>
<td>• Need for sleep medication</td>
<td></td>
</tr>
<tr>
<td>• Awakening night/morning</td>
<td></td>
</tr>
<tr>
<td>• Interference of pain</td>
<td></td>
</tr>
</tbody>
</table>

- **Chronic Pain Condition**
  - Osteoarthritis
  - Low back pain
  - Chronic non-cancer pain
  - Diabetic peripheral neuropathy

- **Analgesics**
  - Long-acting opioid
  - Short-acting opioid

- **Measures**
  - Interventional treatment
  - Fatigue
  - Intervention in depression
  - Patient-Health Questionnaire 9
  - Beck Depression Inventory scores
  - Scores and incidence of normal mood scores
  - Reduced incidence of mood disturbances
  - Borderline to extreme depression

- **Cognition**
  - Chronic non-malignant pain

- **Quality of life**
  - Antidepressant
  - Sustained-release opioid

- **Opoid**
  - Chronic non-malignant pain

- **Impact**
  - Decrease in those associated with [1]
  - Reporting "long-term limiting illness" (SF-36) [27]
  - Score > 5 on 7 pain interference items [28]
  - 26 chronic severe pain
  - 2.7 (pain but not chronic severe pain)

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*Unless otherwise indicated, control groups are composed of patients without chronic pain. OR = odds ratio; CI = confidence interval.*
A review of chronic pain impact on patients, their social environment and the health care system

Abstract: Chronic pain (CP) seriously affects the patient's daily activities and quality of life, but few studies on CP have considered its effects on the patient's social and family environment. In this work, through a review of the literature, we assessed several aspects of how CP influences the patient’s daily activities and quality of life, as well as its repercussions in the workplace, and on the family and social environment. Finally, the consequences of pain on the health care system are discussed. On the basis of the results, we conclude that in addition to the serious consequences on the patient's life, CP has a severe detrimental effect on their social and family environment, as well as on health care services. Thus, we want to emphasize on the need to adopt a multidisciplinary approach to treatment so as to obtain more comprehensive improvements for patients in familial and social contexts. Accordingly, it would be beneficial to promote more social- and family-oriented research initiatives.

Keywords: pain, everyday problems, social relationships, family environment, health services

Introduction
Chronic pain (CP) is recognized as a major public health problem, producing a significant economic and social burden.1-4 Moreover, this condition not only affects the patient (both as a sensory and emotional problem) but it also affects his/her family and social circle.5-9 The biopsychosocial model, considered essential in pain, provides a framework for understanding how different diseases are related through an assessment of sensorial, cognitive/affective, and interpersonal factors. Thus, considering this framework, it has been shown that CP is often associated with other processes that, in turn, affect pain strongly (Figure 1).

Studies performed in different settings have demonstrated that CP affects between 10% and 30% of the adult population in Europe.5-8 Indeed, a recent study showed a 16.6% prevalence of this condition among the general population in Spain, with at least one person affected in every four Spanish homes.4 The experience of pain interferes with different aspects of the patient's life,7 negatively affecting their daily activities, physical and mental health, family and social relationships, and their interactions in the workplace (Figure 1). This problem also affects the health care system and what is known as economic well-being.13-15 The strong burden associated with CP not only deriving from health care costs but also from the loss of productivity and from compensatory payments to patients as a result of the disability that pain produces.16

Figure 1 Biopsychosocial model of pain and consequences on the quality of life.
A TREATMENT IMPROVEMENT PROTOCOL
Managing Chronic Pain in Adults With or in Recovery
From Substance Use Disorders

TIP 54

Exhibit 3-1 Algorithm for Managing Chronic Pain in Patients With SUD

Evaluation sufficient to confirm:
- Diagnosis of chronic pain (pain does not result from a health-threatening or correctable pathology)
- Functional impairment
- Psychological comorbidity

Active addiction
- Start addiction treatment
- Defer opioids/analgesia (Patient already on opioids should have trial of opioid weaning; opioids may be continued only if the patient immediately initiates SUD treatment.)
- Non-opioid analgesics as determined by pain physiology
- Continue agonist; may increase dose as required for analgesia

In recovery
- Without medication
- On agonist therapy

Concurrent
- Nonpharmacologic pain treatments
- Reconditioning as determined by functional impairment
- Treatment of psychiatric/sleep comorbidities

Successful outcome
- Inadequate benefit

Initiate opioid trial if risk is warranted
- Repeated
- Failure
- Success
- Wean opioid
- Continue other therapies
- Continue strategy
- Monitor for demonstration of continued benefit

Relapse

SAMHSA
www.samhsa.gov 1-877-SAMHSA-7 (1-877-726-7747)
### Exhibit 3-2 Summary of Non-Opioid Analgesics

<table>
<thead>
<tr>
<th>Analgesic</th>
<th>Addictive</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>No</td>
<td>Should normally not exceed 4 g/day; in adults with hepatic disease, the maximum dose is 2 g/day. Potentiates analgesia without potentiating respiratory and sedative side effects.</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>No</td>
<td>Are used to relieve numerous types of pain, especially bone, dental, and inflammatory, and enhance opioid analgesia. May cause gastrointestinal bleeding and renal insufficiency.</td>
</tr>
<tr>
<td>Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs)</td>
<td>No</td>
<td>Are used to relieve several nonstructural types of pain (e.g., migraine, fibromyalgia, low back pain) and probably others.</td>
</tr>
<tr>
<td>Tricyclic Antidepressants</td>
<td>No</td>
<td>Have demonstrated efficacy in migraine prophylaxis, fibromyalgia, many neuropathic pains, vulvodynia, and functional bowel disorders. Watch for anticholinergic side effects and orthostatic hypotension (fall risk in older people).</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>No</td>
<td>Some have demonstrated efficacy in relieving fibromyalgia, migraine prophylaxis, and neuropathic pains.</td>
</tr>
<tr>
<td>Topical Analgesics</td>
<td>No</td>
<td>Comprise several unrelated substances (e.g., NSAIDs, capsaicin, local anesthetics). Work locally, not systemically, and therefore usually have minimal systemic side effects.</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>No</td>
<td>Have no demonstrated analgesic effect, except to abort migraine/cluster headache. Risks include extrapyramidal reactions and metabolic syndrome.</td>
</tr>
<tr>
<td>Muscle Relaxants</td>
<td>Carisoprodol (Soma) is addictive. Some others have significant abuse potential.</td>
<td>Have not been shown to be effective beyond the acute period. Some potentiate opioids and are not recommended.</td>
</tr>
</tbody>
</table>

Key Points

- Pain treatment goals should include improved functioning and pain reduction.
- Treatment for pain and comorbidities should be integrated.
- Non-opioid pharmacological and nonpharmacological therapies, including CAM, should be considered routine before opioid treatment is initiated.
- Opioids may be necessary and should not be ruled out based on an individual’s having an SUD history.
- The decision to treat pain with opioids should be based on a careful consideration of benefits and risks.
- Addiction specialists should be part of the treatment team and should be consulted in the development of the pain treatment plan, when possible.
- A substantial percentage of patients with and without SUDs will fail to benefit from prolonged opioid therapy, in which case it should be discontinued, as with any other failed treatment.
CDC Guideline for Prescribing Opioids for Chronic Pain

12 recommendations, including:

- Opioids not 1st line or routine therapy for chronic pain
- Use caution when increasing dosages, especially ≥50 mg*; avoid or justify escalating to ≥90 mg
- No more than needed for acute pain; 3-7 days usually enough
- Check Prescription Drug Monitoring Program (PDMP) for other prescriptions, high total dosages
- Avoid concurrent benzodiazepines and opioids
- Offer or arrange medication-assisted treatment for opioid use disorder

*in morphine equivalents
Interventions for Chronic Pain

Cognitive therapy
- Monitor thoughts and feelings
- Attention diversion/distraction
- Imagery and Hypnosis

Behavioral therapy
- Activity monitoring
- Stress monitoring and reduction
- Relaxation and Biofeedback
Pain Is Not Associated with Worse Office-Based Buprenorphine Treatment Outcomes

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Nancy L. Sohler, PhD, MPH
Joanna L. Starrels, MD, MS
Yuming Ning, PhD
Angela Giovannucci, PharmD
Chinazo O. Cunningham, MD, MS

ABSTRACT: Physical pain is common among individuals seeking treatment for opioid dependence. Pain may negatively impact addiction treatment. The authors prospectively studied opioid-dependent individuals initiating office-based buprenorphine treatment, comparing buprenorphine treatment outcomes (treatment retention and opioid use) among participants with and without pain (baseline pain or persistent pain). Among 82 participants, 60% reported baseline pain and 38% reported persistent pain. Overall, treatment retention was 56% and opioid use decreased from 89% to 26% over 6 months. In multivariable analyses, the authors found no association between pain and buprenorphine treatment outcomes. Opioid-dependent individuals with and without pain can achieve similar success with buprenorphine treatment.

KEYWORDS: Buprenorphine, chronic pain, opioid dependence

I. Introduction

Chronic pain is highly prevalent in treatment-seeking, opioid-dependent populations with between 36% and 68% affected (Burry et al., 2015; Tid et al., 2016). Thus, chronic pain is an important clinical condition to be considered by addiction specialists. Furthermore, patients in receipt of opioid agonist therapy (OAT) who have comorbid chronic pain are associated with relatively poor health outcomes and substance use treatment outcomes, further complicating the delivery of effective treatment in substance misuse services. This comorbid presentation is associated with an increased risk of medical and psychiatric morbidities (Ekendal et al., 2013; O’Toole et al., 2013), in addition to relatively severe and enduring substance misuse problems (Dixon et al., 2014).

Lenten et al., 2007, in addressing this issue, many studies have focused on any substance misuse (rather than specific drug misuse) as the target variable (e.g., Calderone et al., 2008) or illicit opioid use versus any other substance misuse (Dixon et al., 2013). However, it makes no sense to identify opioid users in this comorbid population to identify any potential opioid misuse. Only then can further research explore the potential causes of the high levels of drug misuse in this comorbid group and work towards effective treatment delivery in substance misuse services.

OAT programs focus on a range of health-related and functional outcomes, but the core outcomes are assumed to be retention in treatment and control over substance use (Drum et al., 2018). These two core aims are assumed to lead to decreased mortality (Cowan et al., 2015).
## Figure 2. Improvement in Pain

<table>
<thead>
<tr>
<th>Cannabinoid Events</th>
<th>Placebo Events</th>
<th>Odds Ratio (95% CI)</th>
<th>Weight, %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tetrahydrocannabinol (smoked)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abrams et al, 2007</td>
<td>13/25</td>
<td>6/25</td>
<td>3.43 (1.03-11.48)</td>
</tr>
<tr>
<td><strong>Nabiximols</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GW Pharmaceuticals, 2005</td>
<td>54/149</td>
<td>59/148</td>
<td>0.86 (0.54-1.37)</td>
</tr>
<tr>
<td>Johnson et al, 2010</td>
<td>23/53</td>
<td>12/56</td>
<td>2.81 (1.22-6.50)</td>
</tr>
<tr>
<td>Langford et al, 2013</td>
<td>84/167</td>
<td>77/172</td>
<td>1.25 (0.81-1.91)</td>
</tr>
<tr>
<td>Nurminsko et al, 2007</td>
<td>16/63</td>
<td>9/62</td>
<td>2.00 (0.81-4.96)</td>
</tr>
<tr>
<td>Portenoy et al, 2012</td>
<td>22/90</td>
<td>24/91</td>
<td>0.90 (0.46-1.76)</td>
</tr>
<tr>
<td>Selvarajah et al, 2010</td>
<td>8/15</td>
<td>9/14</td>
<td>0.63 (0.14-2.82)</td>
</tr>
<tr>
<td>Serpell et al, 2014</td>
<td>34/123</td>
<td>19/117</td>
<td>1.97 (1.05-3.70)</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>241/660</td>
<td>209/660</td>
<td>1.32 (0.94-1.86)</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>254/685</td>
<td>215/685</td>
<td>1.41 (0.99-2.00)</td>
</tr>
</tbody>
</table>

Odds Ratio (95% CI)

- **Favors Placebo**
- **Favors Cannabinoid**

Last corrected on November 5, 2015.
Cannabinoids for the Treatment of Chronic Non-Cancer Pain: An Updated Systematic Review of Randomized Controlled Trials

M. E. Lynch1,2 - Mark A. Wain3

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© Springer Science+Business Media New York 2015

Abstract An updated systematic review of randomized controlled trials examining cannabinoids in the treatment of chronic non-cancer pain was conducted according to PRISMA guidelines for systematic reviews reporting on healthcare outcomes. Eleven trials published since our last review met inclusion criteria. The quality of the trials was excellent. Seven of the trials demonstrated a significant analgesic effect. Several trials also demonstrated improvement in secondary outcomes (e.g., sleep, muscle stiffness and spasticity). Adverse effects most frequently reported such as fatigue and dizziness were mild to moderate in severity and generally well tolerated. This review adds further support that currently available cannabinoids are safe, modestly effective analgesics that provide a reasonable therapeutic option in the management of chronic non-cancer pain.

Introduction

Chronic pain is a growing public health problem affecting approximately one in five people and predicted to increase to one in three over the next two decades (Blytt et al. 2001; Moutin et al. 2002; Breivik et al. 2006). The prevalence of chronic pain is likely to increase as the population ages and as medical advances continue to improve survival related to cancer, serious injury and diseases that previously would have been fatal, such as HIV, but have left the survivors with serious neuropathic pain conditions (Lynch 2011). Currently available agents (e.g., antidepressant and anticonvulsant analgesics, opioids and nonsteroidal anti-inflammatory drugs) (Finnnp et al. 2010) are inadequate to control all pain or are associate
Conclusions

• Pain is common among people with addiction and can be managed
• OUD treatment outcomes not worse for those with chronic pain
• Split dosing and multi-modal interventions are key
• Cannabinoids hold promise for treatment of pain
• Person-centered care – essential for both addiction and pain management
Questions