Opioids Pain and Addiction

Oregon AHEC Opioid Symposium
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Show of hands

• How many of you take care of patients with chronic/persistent pain and have prescribed opioids?

• Who is worried about contributing to the opioid epidemic?

• Who is comfortable making a diagnosis of Opioid Use Disorder (OUD) in patients taking long-term opioid therapy?

• Once a diagnosis of OUD is reached, who is confident treating OUD and/or referring for treatment
Objectives

• Understand more about how pain and long term opioid therapy (LTOT) change the brain

• Understand more about how these changes in the brain drive behavior and make diagnosis of substance use disorder challenging

• Review scope of the opioid epidemic and concrete ways you can save lives
Do Opioids Work for Chronic Pain?

• Insufficient evidence for long-term effectiveness - No study of opioid therapy vs no opioid therapy evaluated long-term (>1 year) outcomes related to pain, function, quality of life, opioid abuse or addiction.

• Nonopioids and opioids had similar benefits for moderate to severe chronic back pain or knee or hip osteoarthritis pain, but nonopioids had fewer adverse treatment-related symptoms.

• Opioids improve chronic noncancer pain more than placebo, but important pain reduction over the long term is unlikely.
Pain Treatment Effectiveness
From UW Pain Medicine and CDC- Extrapolated Results

<table>
<thead>
<tr>
<th>Pain Treatments</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Fitness</td>
<td>6</td>
</tr>
<tr>
<td>Counseling</td>
<td>5</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>5</td>
</tr>
<tr>
<td>Better Sleep</td>
<td>4</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>3</td>
</tr>
<tr>
<td>Non-Opioid Medications</td>
<td>3</td>
</tr>
<tr>
<td>Opioid Medications</td>
<td>3</td>
</tr>
</tbody>
</table>
More than 11.5 million people reported misuse of prescription pain medicine in 2016.
From 1999 to 2016, more than 200,000 people died in the United States from overdoses related to prescription opioids.

Every day, more than 1,000 people are treated in emergency departments for misusing prescription opioids, and more than 46 people die from prescription opioid overdoses.
Unintentional opioid overdose increases exponentially at morphine equivalent doses $> 50$ mg/day.
"ONE PRESCRIPTION CAN BE ALL IT TAKES TO LOSE EVERYTHING."

—MIKE
When opioids are started, clinicians should prescribe the lowest effective dosage. Clinicians should use caution when prescribing opioids at any dosage, should carefully reassess evidence of individual benefits and risks when considering increasing dosage to ≥50 morphine milligram equivalents (MME)/day, and should avoid increasing dosage to ≥90 MME/day or carefully justify a decision to titrate dosage to ≥90 MME/day.
**Trends in Opioid Prescribing**

**FIGURE 1A**

Annual opioid prescribing rates overall and for high-dosage prescriptions* (≥ 90 MME/day)* — United States, 2006–2017

![Graph showing trends in opioid prescribing rates.](image)

Source: IQVIA™ Transactional Data Warehouse.

*High-dosage prescriptions were defined as opioid prescriptions resulting in a daily dosage of ≥ 90 morphine milligram equivalents.

*Temporal trends from 2006 to 2017 were evaluated by applying joinpoint regression methodology. This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occurred within a time series. A maximum of two joinpoints was allowed, and the permutation method was used for model selection. Different line dashes correspond to year groupings as determined by joinpoint regression.
FIGURE 1C

Average daily morphine milligram equivalents (MME) per opioid prescription* —
United States, 2006–2017

Source: IQVIA™ Transactional Data Warehouse.
Abbreviation: MME, morphine milligram equivalents.

*Temporal trends from 2006 to 2017 were evaluated by applying joinpoint regression methodology. This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occurred within a time series. A maximum of two joinpoints was allowed, and the permutation method was used for model selection. Different line dashes correspond to year groupings as determined by joinpoint regression.
Trends in Drug Overdose Deaths

Age-adjusted rates$^a$ of drug overdose deaths$^a$ and drug overdose deaths involving any opioid$^a$
for all intents and for unintentional intent by year — United States, 1999–2016

Source: National Vital Statistics System, Mortality File, CDC WONDER.

$^a$ Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year.

$^a$ Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). All drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y11–Y14 (undetermined). Unintentional drug overdose deaths are identified using underlying cause-of-death codes X40–X44. Note that overall drug overdose deaths and opioid overdose deaths include deaths of any intent. In 2016, 5.7% of drug overdose deaths had undetermined intent; this is a decrease from 14.7% of drug overdose deaths that had an undetermined intent in 1999. Some of these deaths may be unintentional drug overdose deaths.

$^a$ Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids excluding methadone (T40.4), and other and unspecified narcotics (T40.6). Specification on death certificates of drugs involved with deaths varies over time. In 2016, approximately 19% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids.
Figure 2B
Age-adjusted rates of drug overdose deaths by drug or drug class and year — United States, 1999–2016

Source: National Vital Statistics System, Mortality File, CDC WONDER.

* Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category. Specification on death certificates of drugs involved with deaths varies over time. In 2016, 15% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids or stimulants.

† Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

§ Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

‖ Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) or methadone (T40.3).

Ⅰ Drug overdose deaths, as defined, that involve heroin (T40.1).

Ⅱ Drug overdose deaths, as defined, that involve cocaine (T40.3).

Ⅲ Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).
Pain Changes the Brain

• “Gliopathic” Pain Generation

• What Happens:
  • Chronic overstimulation of nociceptive neurons leads to CNS remodeling via neuroplasticity.
  • Sessile microglial cells respond to high-level neuronal stimulation and become activated.
  • This activation becomes the signal for neuronal destruction.

• Bottom Line: Persistent pain physically restructures the brain, and transforms the brain’s perception of the body.
Opioids change the brain and spinal cord

• Opioids bind to several sub-sets of receptors in the Brain and Spinal Cord.
  • Mu- Receptor → Primary analgesic pathway
  • Kappa- Receptor → Primary hyperalgesia/tolerance
  • Sigma-Receptor → Secondary analgesic pathway
  • Delta-Receptor → Accessory pathway

• Tolerance and hyperalgesia immediately begin with the first dose of opioid.
  • G-protein linked Ca/Mg channel hyper-polarization
  • Receptor down-regulation
The importance of understanding tolerance/dependence

Dose required to achieve same degree of pain relief when rechallenged after 1 week of chronic dosing
What is Opioid Dependence?

• Refers to the physiologic state of requiring the presence of opioids in order to maintain homeostasis of CNS dopamine levels.

• **Withdrawal** is the hallmark of “Opioid deficiency” in the setting of physiologic dependency.
  
  • Severe emotional distress, Depression/Anxiety
  • Autonomic Instability
    • Sweating, tremor, diarrhea, mydriasis, excessive tearing and rhinorrhea.
  • PAWS “Post-acute withdrawal” symptoms persist for months.
  • Deeply Traumatic experience
The importance of understanding tolerance/dependence

Considering the Therapeutic Window

Opioid “Comfort” Zone

Opioid Overmedication Signs:
- Pinpoint pupils, drowsy or nodding-off, listless mental status, itching/scratching, flushing, decreased body temperature, slowed heartbeat and/or respirations.

No Illicit Opioid Use
No Withdrawal or Overmedication

Opioid Withdrawal—Subjective Symptoms:
- Drug craving, anxious feelings or depression, irritability, fatigue, insomnia, hot/cold flashes, aching muscles/joints, nausea, disorientation, restlessness.

Severe Opioid Withdrawal—Objective Signs:
- Dilated pupils, illicit opioid use, “goose flesh,” perspiring, shaking, diarrhea, vomiting, runny nose, sneezing, yawning, fever, hypertension, increased heartbeat and/or respirations.

Considerations: Analgesia vs. Withdrawal Avoidance
The “experience” of opioid analgesia

- Occurs as a potentially novel and unique experience for each patient with each exposure.

- Opioid analgesic → Mid-brain dopamine release
  - The SAME Survival-Based Reward/Reinforcement pathway that leads to addictive drive/behavior.
  - The human midbrain is tasked with integrating the ‘intensity’ of the pain signal with the ‘intensity’ of the analgesic signal.

Mismatch = Euphoria or Inadequate Analgesia
What is Opioid Hyperalgesia?

- Phenomenon that is different from opioid tolerance.
- Evolution of CNS to yield increased sensitivity to historically non-noxious stimuli. (allodynia)
- Mechanism- NMDA receptor activation by opioids directly and indirectly via multiple membrane complexes.
  - May be antagonized by NMDA-R antagonists
    - Ketamine, dextromethorphan
    - Methadone has inherent NMDA-R antagonist properties
    - Buprenorphine is a potent Kappa receptor antagonist
- If opioids are making pain worse, more opioids are not the answer
Opiate induced hyperkatifeia

• Neuroadaptation in brain reward systems which parallels opiate hyperalgesia and may indicate a transition to addiction vulnerability.

• Opiate misuse in the context of pain management produces a hypersensitivity to emotional distress.
  • Mood changes linked directly to opiate therapy in the setting of a pain diagnosis.

• Continuous engagement of opponent processes leads to destabilization of homeostasis.
  • Analgesia vs. ‘treatment of underling emotional state.’
  • Pre-existing emotional state vs. one induced by the reward experience.

Opiate HYPERKATIFEIA

- OVER TIME......
They’re the most powerful painkillers ever invented.

And they’re creating the worst addiction crisis America has ever seen.

By Massimo Calabresi
Prescription opioids can be addictive and dangerous.

It only takes a little to lose a lot.

cdc.gov/RxAwareness
The risk of addiction increases at higher doses prescribed over longer periods of time.

<table>
<thead>
<tr>
<th>Incidence Rate</th>
<th>Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No opioids</td>
<td>0.004%</td>
</tr>
<tr>
<td>Acute, low dose</td>
<td>0.12%</td>
</tr>
<tr>
<td>Med dose</td>
<td>0.12%</td>
</tr>
<tr>
<td>High dose</td>
<td>0.12%</td>
</tr>
<tr>
<td>Chronic, low dose</td>
<td>0.72%</td>
</tr>
<tr>
<td>Med dose</td>
<td>1.28%</td>
</tr>
<tr>
<td>High dose</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Chronic ≥ 90 days; low dose 1-36 mg; med dose 36-120 mg; high dose ≥ 120 mg
Dependence vs Addiction

- Salience: The quality of being particularly noticeable, important, or prominent
- Salience in the setting of pain:
  Analgesia → Fundamentally emotional dissociation from the experience of physical distress.

-What about medication induced euphoria/reinforcement?
-What about therapeutic dependency?
-How do these lines blur over time?

ASAM Definition

Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

http://www.asam.org/for-the-public/definition-of-addiction
Cycle of Addiction

1. **Binge/Intoxication (Basal Ganglia)** - An individual consumes an intoxicating substance and experiences its rewarding or pleasurable effects.

2. **Withdrawal/Negative (Extended Amygdala)** - An individual experiences a negative physical and emotional state in the absence of the substance; and

3. **Preoccupation/Anticipation (Prefrontal Cortex)** - One seeks substances again after a period of abstinence.

This cycle becomes more severe as a person continues substance use and as it produces dramatic changes in brain function that reduce a person’s ability to control his or her substance use.

What is (Opioid) Addiction?

• We now use the term: “Opioid Substance Use Disorder”
  • Mild, Moderate, Severe

• Fundamentally, ADDICTION is the following:

  Compulsive Use Despite Harm
  Rooted in the concept of “Salience” ➔ That which is ‘important’
    -Addiction ➔ Related to self-medication, chemical coping, regulation of emotions.

  -Physical Dependency ➔ Drives tolerance and behavior that can look like Addiction and transforms into Addictive behavior.
<table>
<thead>
<tr>
<th>Hazardous use</th>
<th>DSM-IV Abuse</th>
<th>2-3 criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/interpersonal problems related to use</td>
<td>DSM-IV Dependence</td>
<td>≥1 criterion</td>
</tr>
<tr>
<td>Neglected major roles to use</td>
<td>DSM-IV Dependence</td>
<td>≥3 criteria</td>
</tr>
<tr>
<td>Legal problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdrawal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Used larger amounts/longer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeated attempts to quit/control use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Much time spent using</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical/psychological problems related to use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activities given up to use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craving</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

2-3 = mild SUD, 4-5 = moderate SUD, >6 severe SUD
Addiction: Moderate to Severe Substance Use Disorder

• “A disease of Self-will.” Meaning there is a total loss of volitional control over behavior. Dr. Nora Volkow, Director NIDA

• A total loss of self-determination

• Drug seeking and repetitive use becomes a conditioned response.
Addiction in clinical practice

• The 4 C’s
  • Loss of Control
  • Compulsive use
  • Continued use despite harms
  • Craving

How do patients Long Term Opioid Therapy behave?

1. Est. 35% of patients on LTOT meet criteria for Opioid Use Disorder.

2. 71% of claimants on LTOT > 3 months are not taking their medication as prescribed.

3. Among “chronic pain population” with sample of 939,000 urine drug screens:
   • 38% medication was absent
   • 29% non-prescribed opioid medication
   • 27% medication levels higher than prescribed
   • 11% illicit drugs
Pain or Fear of Withdrawal?


Reasons for opioid use among patients with dependence on prescription opioids: the role of chronic pain.

Weiss RD¹, Potter JS², Griffin ML³, McHugh RK³, Haller D⁴, Jacobs P⁵, Gardin J 2nd⁶, Fischer D⁷, Rosen KD⁸.

Author Information

Abstract

The number of individuals seeking treatment for prescription opioid dependence has increased dramatically, fostering a need for research on this population. The aim of this study was to examine reasons for prescription opioid use among 653 participants with and without chronic pain, enrolled in the Prescription Opioid Addiction Treatment Study, a randomized controlled trial of treatment for prescription opioid dependence. Participants identified initial and current reasons for opioid use. Participants with chronic pain were more likely to report pain as their primary initial reason for use. Avoiding withdrawal was rated as the most important reason for current use in both groups. Participants with chronic pain rated using opioids to cope with physical pain as more important, and using opioids in response to social interactions and craving as less important, than those without chronic pain. Results highlight the importance of physical pain as a reason for opioid use among patients with chronic pain.
Substance Use Disorder diagnosis is difficult in patients suffering from persistent pain who are on LTOT

- For the patient who uses illicit substances
  - Procurement behaviors

- For the patient with pain – much more complex
  - Continuous opioid therapy may prevent opioid seeking
  - Memory of pain, pain relief and possibly also euphoria
  - Even if the opioid seeking appears as seeking pain relief, it becomes an adaptation that is difficult to reverse
  - It is hard to distinguish between drug seeking and relief seeking
“CONSUMED” by: Craving, Pain, Withdrawal, Mood/Anxiety

Desire for relief from pain
Avoidance of withdrawal
Mood change → Sad/Angry
Focus and concentration
Sleep disturbance from pain
Physical limitations
Side effects
Conflict → Resolution
Hyperalgesia

Desire to get high
Avoidance of withdrawal
Avoidance of “reality”
Desire to “feel normal” again
Boredom
Mood change
Sleep disturbance
Conflict → Resolution
Hyperalgesia
Complex Persistent Dependence

• Many on LTOT have:
  • poor pain control
  • functional decline
  • psychiatric instability
  • aberrancies and misuse
  • issues may often worsen with opioid tapering

• A diagnostic distinction between dependence and addiction is nearly impossible in many patients on LTOT with the available criteria

Complex Persistent Dependence

The grey area between simple dependence and addiction

- Escalating and labile opioid need → aberrant behaviors
- Desire to continue or increase the dose of LTOT, or inability to discontinue LTOT
- Worsening pain, function, affective symptoms and sleep disturbance
- Affective dynamism with escalating opioid need while maintained on LTOT
- Protracted withdrawal syndrome on opioid dose reduction or cessation

CSAM by Stefan Kertesz, MD from University Alabama Birmingham/VA.
Role of Buprenorphine

• **Buprenorphine**: Emerging as a helpful analgesic agent in patients with poorly controlled chronic pain with full agonist opioids
  • Partial mu opioid agonist
  • Ceiling effect on side effects like sedation, constipation and hedonic properties
  • No clinically-relevant ceiling effect on analgesia, is

• Associated with lower levels of dependency and comparatively higher levels of safety
### TABLE 2F
Self-reported prevalence of illicit and prescription drug treatment* in the past year, persons 12+ years old, by demographic characteristics, numbers in thousands — United States, 2016

<table>
<thead>
<tr>
<th>Socio-demographic characteristic</th>
<th>Any location</th>
<th>Specialty facility&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>All</td>
<td>2,181</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,391</td>
<td>1.1</td>
</tr>
<tr>
<td>Female</td>
<td>791</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-17</td>
<td>121</td>
<td>0.5</td>
</tr>
<tr>
<td>18-25</td>
<td>418</td>
<td>1.2</td>
</tr>
<tr>
<td>≥ 26</td>
<td>1,643</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Conclusions

The data from these four sources suggest the following conclusions:

- Opioid prescribing and high-dose prescribing continued to decrease through 2017. Overall, data suggest that some prescribing practices continued to improve in 2017, and sustained efforts are needed to help providers adopt and maintain safe prescribing behaviors.
- A low percentage of those needing treatment for substance abuse are able to access it. In addition to expanding treatment options and access, additional measures are needed to prevent illicit drug use and prescription drug misuse in a dynamic drug landscape.
- Drug overdose deaths in 2016 reached a new record high.
- Heroin, synthetic opioids other than methadone (mostly illicitly manufactured fentanyl), cocaine, and psychostimulants with abuse potential were driving increases in overdose deaths in 2016.
VAST Chasm between NEED and ACCESS
Clinicians should 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.

Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk factors for opioid-related harms. Clinicians should 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 ($\geq 50$ MME/day), or concurrent benzodiazepine use, are present.
Buprenorphine has been used internationally for the treatment of opioid use disorder (OUD) since the 1990s and has been available in the United States for more than a decade. Initial practice recommendations were intentionally conservative, were based on expert opinion, and were influenced by methadone regulations. Since 2003, the American crisis of OUD has dramatically worsened, and much related empirical research has been undertaken. The findings in several important areas conflict with initial clinical practice that is still prevalent. This article reviews research findings in the following 7 areas: location of buprenorphine induction, combining buprenorphine with a benzodiazepine, relapse during buprenorphine treatment, requirements for counseling, uses of drug testing, use of other substances during buprenorphine treatment, and duration of buprenorphine treatment. For each area, evidence for needed updates and modifications in practice is provided. These modifications will facilitate more successful, evidence-based treatment and care for patients with OUD.

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For author affiliations, see end of text.
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### Table. Buprenorphine Care: Previous Approaches Compared With New Findings and Recommendations

<table>
<thead>
<tr>
<th>Previous Approach</th>
<th>New Findings and Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>A medical setting is needed for induction.</td>
<td>Home induction is also safe and effective (6).</td>
</tr>
<tr>
<td>Benzodiazepine and buprenorphine coprescription is toxic.</td>
<td>Buprenorphine should not be withheld from patients taking benzodiazepines (5).</td>
</tr>
<tr>
<td>Relapse indicates that the patient is unfit for buprenorphine-based treatment.</td>
<td>Relapse indicates the need for additional support and resources rather than cessation of buprenorphine treatment (43).</td>
</tr>
<tr>
<td>Counseling or participation in a 12-step program is mandatory.</td>
<td>Behavioral treatments and support are provided as desired by the patient (6).</td>
</tr>
<tr>
<td>Drug testing is a tool to discharge patients from buprenorphine treatment or compel more intensive settings.</td>
<td>Drug testing is a tool to better support recovery and address relapse (56).</td>
</tr>
<tr>
<td>Use of other substances is a sign of treatment failure and grounds for dismissal from buprenorphine treatment.</td>
<td>Buprenorphine treatment does not directly affect other substance use, and such use should be addressed in this context (43).</td>
</tr>
<tr>
<td>Buprenorphine is a short-term treatment, prescribed with tapered dosages or for weeks to months.</td>
<td>Buprenorphine is prescribed as long as it continues to benefit the patient (6).</td>
</tr>
</tbody>
</table>
Chronic Pain and Suicide Risk

• Many studies have linked chronic pain to a higher risk for fatal and nonfatal suicide attempts.
• The elevated rates of suicidal behaviors in persons with chronic pain reflect the direct and indirect ways chronic pain relates to suicidal thoughts, plans, and attempts.
• Pain-related interventions need to be supplemented with mental health treatment in persons with pain and depressive and anxiety-related symptoms to foster hope and help address suicidal thoughts and plans.
How do opioids factor in?

- On one hand, opioids are potentially lethal in higher quantities, and the suicide prevention literature has consistently demonstrated that access to lethal means can increase the risk for suicide.

- On the other hand, opioids may reduce suffering in persons with chronic pain, and ongoing efforts to reduce higher-dose opioid prescribing might lead to an increase in suicide among those with pain.

Take Homes

• Chronic pain and LTOT change the brain profoundly
• Diagnosing OUD in patients who are on LTOT is challenging
• Keep taking care of patients even when (especially when) they misuse their opioids
• Explore reasons for aberrant behaviors (ie CPD, hyperalgesia, hyperkatifeia, psychiatric distress)
What you can do to combat the opioid epidemic and SAVE LIVES

• Get your DATA Waiver – [SAMSHA website](https://www.samhsa.gov)
• Diagnose and treat Opioid Use Disorder – MAT is live saving
• Prescribe Naloxone - Prevent overdose
• Diagnose and treat depression - Prevent suicide
THANK YOU

• Brianna Sustersic, MD

• Brianna.Sustersic@CCConcern.org