
SCOPE of Pain
Safer/Competent Opioid Prescribing Education
Reference Materials and Resources
BU
Boston University School of Medicine
Continuing Medical Education

Reference Materials and Resources

Table of Contents

BOX 1. CDC recommendations for prescribing opioids for chronic pain outside of active cancer, palliative, and end-of-life care

Determining When to Initiate or Continue Opioids for Chronic Pain

1. Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for chronic pain. Clinicians should consider opioid therapy only if expected benefits for both pain and function are anticipated to outweigh risks to the patient. If opioids are used, they should be combined with nonpharmacologic therapy and nonopioid pharmacologic therapy, as appropriate.
2. Before starting opioid therapy for chronic pain, clinicians should establish treatment goals with all patients, including realistic goals for pain and function, and should consider how therapy will be discontinued if benefits do not outweigh risks. Clinicians should continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety.
3. Before starting and periodically during opioid therapy, clinicians should discuss with patients known risks and realistic benefits of opioid therapy and patient and clinician responsibilities for managing therapy.

Opioid Selection, Dosage, Duration, Follow-Up, and Discontinuation

4. When starting opioid therapy for chronic pain, clinicians should prescribe immediate-release opioids instead of extended-release/long-acting (ER/LA) opioids.
5. 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 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.
6. Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should 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.
7. Clinicians should evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. Clinicians should 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, clinicians should optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids.

Assessing Risk and Addressing Harms of Opioid Use

8. 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 (≥50 MME/day), or concurrent benzodiazepine use, are present.
9. Clinicians should 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. Clinicians should 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.
10. When prescribing opioids for chronic pain, clinicians should 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.
11. Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible.
12. 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.

*All recommendations are category A (apply to all patients outside of active cancer treatment, palliative care, and end-of-life care) except recommendation 10 (designated category B, with individual decision making required); see full guideline for evidence ratings.

Checklist for prescribing opioids for chronic pain

For primary care providers treating adults (18+) with chronic pain ≥3 months, excluding cancer, palliative, and end-of-life care

CHECKLIST

When CONSIDERING long-term opioid therapy

- ☐ Set realistic goals for pain and function based on diagnosis (eg, walk around the block).
- ☐ Check that non-opioid therapies tried and optimized.
- ☐ Discuss benefits and risks (eg, addiction, overdose) with patient.
- ☐ Evaluate risk of harm or misuse.
  - Discuss risk factors with patient.
  - Check prescription drug monitoring program (PDMP) data.
  - Check urine drug screen.
- ☐ Set criteria for stopping or continuing opioids.
- ☐ Assess baseline pain and function (eg, PEG scale).
- ☐ Schedule initial reassessment within 1–4 weeks.
- ☐ Prescribe short-acting opioids using lowest dosage on product labeling; match duration to scheduled reassessment.

If RENEWING without patient visit

- ☐ Check that return visit is scheduled ≤3 months from last visit.

When REASSESSING at return visit

Continue opioids only after confirming clinically meaningful improvements in pain and function without significant risks or harm.

- ☐ Assess pain and function (eg, PEG); compare results to baseline.
- ☐ Evaluate risk of harm or misuse:
  - Observe patient for signs of over-sedation or overdose risk.
    - If yes: Taper dose.
  - Check PDMP.
  - Check for opioid use disorder if indicated (eg, difficulty controlling use).
    - If yes: Refer for treatment.
- ☐ Check that non-opioid therapies optimized.
- ☐ Determine whether to continue, adjust, taper, or stop opioids.
- ☐ Calculate opioid dosage morphine milligram equivalent (MME).
  - If ≥50 MME/day total (≥50 mg hydrocodone; ≥33 mg oxycodone), increase frequency of follow-up; consider offering naloxone.
  - Avoid ≥90 MME/day total (≥90 mg hydrocodone; ≥60 mg oxycodone), or carefully justify; consider specialist referral.
- ☐ Schedule reassessment at regular intervals (≤3 months).

REFERENCE

EVIDENCE ABOUT OPIOID THERAPY

- *Benefits of long-term opioid therapy for chronic pain not well supported by evidence.*
- *Short-term benefits small to moderate for pain; inconsistent for function.*
- *Insufficient evidence for long-term benefits in low back pain, headache, and fibromyalgia.*

NON-OPIOID THERAPIES

Use alone or combined with opioids, as indicated:

- Non-opioid medications (eg, NSAIDs, TCAs, SNRIs, anti-convulsants).
- Physical treatments (eg, exercise therapy, weight loss).
- Behavioral treatment (eg, CBT).
- Procedures (eg, intra-articular corticosteroids).

EVALUATING RISK OF HARM OR MISUSE

Known risk factors include:

- Illegal drug use; prescription drug use for nonmedical reasons.
- History of substance use disorder or overdose.
- Mental health conditions (eg, depression, anxiety).
- Sleep-disordered breathing.
- Concurrent benzodiazepine use.

Urine drug testing: Check to confirm presence of prescribed substances and for undisclosed prescription drug or illicit substance use.

Prescription drug monitoring program (**PDMP**): Check for opioids or benzodiazepines from other sources.

ASSESSING PAIN & FUNCTION USING PEG SCALE

PEG score = average 3 individual question scores
(30% improvement from baseline is clinically meaningful)

Q1: *What number from 0–10 best describes your **pain** in the past week?*
0="no pain", 10="worst you can imagine"

Q2: *What number from 0–10 describes how, during the past week, pain has interfered with your **enjoyment of life**?*
0="not at all", 10="complete interference"

Q3: *What number from 0–10 describes how, during the past week, pain has interfered with your **general activity**?*
0="not at all", 10="complete interference"

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

TO LEARN MORE
www.cdc.gov/drugoverdose/prescribing/guideline.html

March 2016

SCOPE of Pain
Safer/Competent Opioid Prescribing Education

BU School of Medicine

Extended Release/Long-Acting Opioids

General Drug Safety Information

This document is provided as a SUMMARY only of side effects and potential drug-drug interactions, for your reference as you prescribe ER/LA Opioids. Please consult the following for more information:

- https://dailymed.nlm.nih.gov/dailymed/ for DETAILED product-specific information, including side effects and contraindications

ER/LA opioid analgesic products are scheduled under the Controlled Substances Act and can be misused and abused.

SIDE EFFECTS:

- MOST COMMON: Constipation. This should be anticipated, and discussed with your patients.
- MOST SERIOUS: Respiratory depression (RD). Patients should be monitored for respiratory depression. You should explain the relative risks and describe appropriate measure to take (including calling 911), as RD can be immediately life-threatening.

DRUG INTERACTIONS AND COMPLICATIONS:

- CNS depressants. ER/LA Opioids are also CNS depressants; combining them with any of the substances below can increase the sedation and respiratory depression effected by the opioids.
  - Alcohol
  - Sedatives
  - Hypnotics
  - Tranquilizers
  - Tricyclic antidepressants
- "Dose Dumping". Exposure to alcohol may cause rapid release of some ER opioid formulations. Alcohol exposure may cause some opioid drug levels to increase, even without dose dumping.
- MAOIs. Use of opioids with MAOIs may result in possible increase in respiratory depression. Use of certain opioids with MAOIs may cause serotonin syndrome (interference with serotonin metabolism, resulting in neuromuscular, autonomic, and behavioral changes due to increased CNS serotonin activity)
- Diuretics. Opioids can reduce the efficacy of diuretics by inducing the release of antidiuretic hormone.
- QTc interval. Methadone and buprenorphine can prolong the QTc interval, increasing the risk of sudden cardiac death.
- MRIs. Patients should NOT wear transdermal fentanyl during MRIs (because of the metal foil backing on the patch).

TOLERANCE TO SEDATING AND RESPIRATORY-DEPRESSANT EFFECTS:

- Patients MUST be opioid tolerant before using any strength of
  - Transdermal fentanyl
  - ER hydromorphone
- Other ER/LA opioids require patients to be opioid tolerant before using
  - Certain strengths
  - Certain daily doses
- See https://dailymed.nlm.nih.gov/dailymed/ for details

Selected Important Safety Information

ABUSE POTENTIAL AND RISK OF LIFE-THREATENING RESPIRATORY DEPRESSION

The branded and generic drug products subject to this REMS include *all*:

- extended-release, oral dosage forms containing
    - hydromorphone,
    - morphine,
    - oxycodone,
    - oxymorphone, or
    - tapentadol;
- fentanyl and buprenorphine-containing transdermal delivery systems; *and*
- methadone tablets and solutions that are indicated for use as analgesics.

These drug products will be collectively referred to as Extended-Release and Long-Acting (ER/LA) prescription opioid analgesics.

ER/LA prescription opioid analgesics are opioid agonists and Schedule II or, Schedule III, as is the case with transdermal buprenorphine, controlled substances with abuse liabilities similar to other opioid agonists. Schedule II and Schedule III opioid substances have high potential for abuse and risk of fatal overdose due to respiratory depression.

ER/LA opioid analgesics can be abused in a manner similar to other opioid agonists, legal or illicit. This should be considered when prescribing or dispensing ER/LA opioid analgesics in situations where the physician or pharmacist is concerned about an increased risk of misuse, abuse, or diversion.

Persons at increased risk for opioid abuse include those with a personal or family history of substance abuse (including drug or alcohol abuse or addiction) or mental illness (e.g., major depression). Patients should be assessed for their clinical risks for opioid abuse or addiction prior to being prescribed opioids. All patients receiving opioids should be routinely monitored for signs of misuse, abuse and addiction.

ER/LA opioid analgesics containing buprenorphine, fentanyl, hydromorphone, methadone, morphine, oxycodone, oxymorphone, and tapentadol are indicated for the management of moderate to severe pain when a continuous, around-the-clock opioid analgesic is needed for an extended period of time. **ER/LA opioid analgesics are not indicated for acute pain. Additionally, ER hydromorphone and transdermal fentanyl products are indicated for use in opioid-tolerant patients only.** For some of the other ER/LA opioid analgesics, certain dosage strengths or certain doses are for use in opioid-tolerant patients only. Consult the individual Full Prescribing Information for dosing instructions for patients who are not opioid tolerant. ER/LA opioid analgesics are not intended for acute pain, pain that is mild or not expected to persist for an extended period of time, or for use on an as-needed basis.

Patients considered opioid tolerant are those who are taking at least 60 mg oral morphine/day, 25 mcg transdermal fentanyl/hour, 30 mg oral oxycodone/day, 8 mg oral hydromorphone/day, 25 mg oral oxymorphone/day, or an equianalgesic dose of another opioid for one week or longer.

ER/LA opioid analgesic formulations have product specific dosage and administration instructions. Refer to the individual Full Prescribing Information for specific doses and dosing recommendations.

ER/LA oral dosage forms must be swallowed whole and must not be cut, broken, chewed, crushed, or dissolved. Taking cut, broken, chewed, crushed or dissolved oral dosage forms leads to rapid release and absorption of a potentially fatal dose of the opioid agonist. For patients who have difficulty swallowing their medication whole, certain oral products may be opened and sprinkled on applesauce—refer to the product-specific Full Prescribing Information.

Transdermal dosage forms must not be cut, damaged, chewed, swallowed or used in ways other than indicated since this may cause choking or overdose resulting in death. Avoid direct external heat sources to transdermal application site and surrounding area.

ER/LA opioid analgesics are contraindicated in patients with a known hypersensitivity to any of the components of ER/LA opioid analgesics, including the respective active ingredients, or in any situation where opioids are contraindicated; in patients who have significant respiratory depression; in patients who have acute or severe bronchial asthma; or in patients who have or are suspected of having paralytic ileus. Additionally, ER hydromorphone and transdermal fentanyl products are contraindicated for use in opioid non-tolerant patients. **These contraindications are not all-inclusive of those for each individual ER/LA opioid analgesic;** therefore, the Full Prescribing Information for the individual ER/LA opioid analgesics must be consulted.

The concomitant use of ER/LA opioid analgesics containing buprenorphine, fentanyl, methadone, or oxycodone with cytochrome P450 3A4 inhibitors may result in increased opioid plasma concentrations and may cause potentially fatal respiratory depression.

Adverse Reactions

Serious adverse reactions of ER/LA opioid analgesics include life threatening respiratory depression, apnea, respiratory arrest, circulatory depression, hypotension, and death.

Accidental exposure of ER/LA opioids, especially in children, can result in death.

With methadone, cases of QT interval prolongation and serious arrhythmia (torsades de pointes) have been observed during treatment. Most cases involve patients being treated for pain with large, multiple daily doses of methadone, although cases have been reported in patients receiving doses commonly used for maintenance treatment of opioid addiction. A positive-controlled study of the effects of transdermal buprenorphine on the QTc interval in healthy subjects demonstrated no clinically meaningful effect at a transdermal buprenorphine dose of 10 mcg/hour; however, a transdermal buprenorphine dose of 40 mcg/hour (given as two 20 mcg/hour transdermal buprenorphine systems) was observed to prolong the QTc interval.

The most common adverse reactions of ER/LA opioid analgesics include constipation, nausea, somnolence, dizziness, vomiting, pruritus, headache, dry mouth, asthenia, and sweating. Additionally, the following have been reported with

transdermal buprenorphine and fentanyl products: application site pruritus, application site erythema, and application site rash. Refer to the individual Full Prescribing Information for all product-specific adverse reactions.

Adverse Event Reporting

Please report all suspected adverse reactions associated with the use of the specific ER/LA opioid analgesic to the appropriate company. You may also report adverse events directly to the FDA's MedWatch Reporting System:

- by calling 1-800-FDA-1088 (1-800-332-1088),
- online at https://www.accessdata.fda.gov/scripts/medwatch/medwatch-online.htm *or*
- by mail using the fillable portable document format (PDF) Form FDA 3500, available at http://www.fda.gov/downloads/Safety/MedWatch/DownloadForms/UCM082725.pdf.

Patient Counseling Document and Medication Guide

The Patient Counseling Document (PCD) on Extended-Release/Long-Acting Opioids is a tool unique to this REMS designed to facilitate important discussions with your patients for whom you select an ER/LA opioid analgesic. The PCD should be provided to the patient and/or their caregiver at the time of prescribing. It contains important safety information about the drug products subject to this REMS and includes space for you to write additional information to help your patients use their ER/LA opioid analgesic safely.

Patients and their caregivers should be counseled on: the importance of taking these medicines exactly as you prescribe them, the need to store ER/LA opioid analgesics safely and securely—out of the reach of children, pets, and household acquaintances to avoid risks from unintended exposure, the importance of not sharing these medications, even if someone has the same symptoms as the patient, and the proper methods of disposal of unneeded ER/LA opioid analgesics.

It is important that you encourage your patients to read the relevant Medication Guide when they pick up their prescription from the pharmacy. The Medication Guide provides important information on the safe and effective use of the specific ER/LA opioid analgesic prescribed.

SCOPE of Pain
Safer/Competent Opioid Prescribing Education

BU School of Medicine

Opioid Analgesics

Basic Patient Counseling Talking Points

Your patients need some basic information about the safer use of opioid analgesics. This information provided here is an outline of those points which should be communicated clearly to patients, whether they are just starting opioid therapy or managing their pain long-term with chronic opioid therapy. This document can be printed and kept handy in your office for easy reference. Please also refer to the FDA **Patient Counseling Guide**.

1. **PRINT** and distribute product-specific information; confirm that patients and/or caregivers will read it (available here: https://dailymed.nlm.nih.gov/dailymed/)

2. **EXPLAIN** details of how to take the medication
    a. Specific dosage
    b. When to take it
    c. How many per day (or within a certain number of hours)
    d. How to take if patient cannot swallow pills/capsules (refer to product-specific information)
    e. Special handling requirements for patch (patient should be aware that external heat, fever, and exertion can increase absorption, leading to overdose)

3. **EXPLAIN** importance of adherence to regimen
    a. How to handle missed doses
    b. Not to increase dosage or decrease interval OR abruptly stop taking opioids
    c. When to call PCP (if pain is not controlled)

4. **WARN** patients of what NOT TO DO
    a. Do NOT break, chew or crush oral medications
    b. Do NOT cut or tear patches prior to use
    c. Do NOT share opioids with others
    d. Do NOT sell or give away opioids (against the law)

5. **WARN** patients of adverse effects/consequences of opioids
    a. Describe common side effects (refer to specific medication information)
    b. Remind patients to call PCP regarding side effects
    c. Describe possibilities of severe side effects (including death)
    d. Describe overdose risks (and risk of death from overdose)

6. **INSTRUCT** patients on safe storage and disposal
    a. Lock boxes – safe from children, family members, visitors, pets
    b. Disposal (refer to product-specific information)
        i. Mix with coffee grounds and put in trash
        ii. Flush down the toilet
        iii. Find national, state, or local “take-back days” (refer to https://takebackday.dea.gov)

JAMA PATIENT PAGE

The Journal of the American Medical Association

MEDICINES

Misuse of Opioid Medication

About 100 million Americans have chronic pain and some may be treated with opioid medications. Opioid medications include codeine, morphine, oxycodone, and fentanyl, among others. These medications can help some people and harm others. In the United States, opioid medications are the second most common drug abused after marijuana. **Opioid medication misuse** is defined as use of an opioid medication different than the way in which it was prescribed (for example, in higher doses) or for reasons other than why it was prescribed (for example, to get high). An article published in the March 6, 2013, issue of *JAMA* discussed opioid misuse.

RISK FACTORS FOR OPIOID MEDICATION MISUSE

- Younger age (<45 years)
- Personal history of substance abuse, mental illness, or legal problems
- Family history of substance abuse

WHAT YOU SHOULD KNOW ABOUT USING OPIOIDS

Not all chronic pain gets better with use of opioids. Opioids can cause side effects, addiction, overdose, and death. Before prescribing opioids, your doctor will need to teach you about how opioid medications can help you and how they can harm you. This may include having you sign an agreement form.

Using opioids safely includes

- Not chewing or crushing the medication
- Not increasing the dose on your own
- Not sharing the medication with others
- Keeping the medication safe from others
- Throwing out extra opioid medications by mixing them with used coffee grounds or cat litter

The risk of harm from opioids is highest

- When the opioid medication is started
- When the dose is increased
- With a high dose (for example, more than 100 mg of morphine)
- When also taking sleep or anxiety medications or using alcohol

MONITORING FOR BENEFIT AND HARM

When you first begin taking an opioid medication, your doctor should see you often. To know if the opioids are helping you, your doctor will ask you if your pain and function are getting better. Your doctor will also look for evidence that the opioids are not helping, are being misused, or are harming you by causing side effects that are unsafe or that stop you from performing your normal daily activities. To check for opioid medication misuse, your doctor may use urine drug tests, pill counts, and official websites that show your prescription history. Urine drug tests are helpful to make sure the opioid is being taken and to see if there is any other drug abuse. Pill counts are helpful to see if you are taking the medication as prescribed. Official websites are helpful to show whether other doctors are prescribing medications to you. If your doctor is worried about opioid medication misuse (for example, if no opioid is found in the urine or an incorrect number of pills remain in your pill bottle), your doctor may decide that the opioid medication is too dangerous for you and will need to be stopped. If your body is physically dependent on the opioid, your doctor may decrease the opioid dose slowly so that you do not get sick from withdrawal.

FOR MORE INFORMATION

- US Food and Drug Administration
  www.fda.gov
- Substance Abuse and Mental Health Services Administration
  www.samhsa.gov
- US Drug Enforcement Administration
  www.deadiversion.usdoj.gov

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page index on *JAMA*'s website at www.jama.com. Many are available in English and Spanish. A Patient Page on acute pain treatment was published in the January 2, 2008, issue and one on opioid abuse was published in the September 15, 2004, issue.

Sources: US Food and Drug Administration, Substance Abuse and Mental Health Services Administration, US Drug Enforcement Administration

Conflict of Interest Disclosures: The author has completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

Daniel P. Alford, MD, MPH, Writer

Edward H. Livingston, MD, Editor

JAMA INTERNAL MEDICINE PATIENT PAGE

What Should I Know About Opioids?

What Are Opioids?

Opioids are a group of substances derived from the plant-based chemical opium. Today many opioids are artificially created to have stronger or longer-lasting effects. Opioids include both prescription medications and illicit drugs. Examples include morphine, hydrocodone, oxycodone, codeine, hydromorphone, tramadol, fentanyl, and heroin. Opioids are addictive. Over time people's bodies require more and more opioid to achieve the same effects. Withdrawal symptoms can appear if opioids are not taken regularly. Opioids can cause death by slowing breathing and causing extreme sedation.

Is My Opioid Use a Problem?

- When a person's pattern of opioid use leads to life problems, poor function, or physical harm, they may have *opioid use disorder*—the medical term for addiction to opioids.
- Recognizing the signs of opioid use disorder in yourself or a loved one can save a life. They include: Craving opioids; using more opioids than intended; problems at work or in relationships owing to opioid use; use in potentially dangerous situations, such as driving; increasing time spent using or searching for opioids; continued use after a bad reaction, overdose, or other harm; the presence of withdrawal symptoms when opioids are not taken.
- These symptoms should prompt a visit to your physician for evaluation immediately.

What Treatments Are Available for Opioid Use Disorder?

- Medications like methadone and buprenorphine are the most effective treatment. These medications have been proven to prevent cravings and reduce opioid related deaths by up to 50%.
- Medications for opioid use disorder are intended for long-term use, similar to blood pressure pills. Stopping them can increase the risk for returning to opioid use (relapse) and death.
  - **Methadone** has been successfully used for over 50 years to treat opioid use disorder. It is taken daily while observed at a specialized treatment program.
  - **Buprenorphine** is typically a daily pill that can be taken at home with a prescription from a licensed provider.
  - **Depot Naltrexone** is a monthly injection that blocks the action of opioids. Evidence for its effectiveness is weaker than for methadone and buprenorphine.
  - **Naloxone** reverses bad reactions and overdose from opioids and can save someone's life. It is available as an easy-to-use nasal spray. If you or someone you know uses opioids, you should have this medication stored where it is easy to find in case of an emergency.
- **Counseling**
  - Counseling and support groups can increase the effectiveness of medication-based treatment. Counseling should be offered in addition to medications whenever possible. It should not be used as a substitute for medication-based treatment.
- **"Detox" Models**
  - There can be a lot of pressure to "just quit" using opioids, and several centers offer detox services. Detox alone is not as effective as medication-based treatment and is potentially dangerous. Evidence shows that people often return to opioid use soon after detox treatment, putting them at especially high risk of overdose death.
  - Sometimes detox may be used to transition to monthly naltrexone injections. This is more effective than detox alone. However, methadone and buprenorphine are the most proven treatments.

Common Misconceptions About Opioid Use

Myths	Facts
✗ Opioid addiction is a choice or moral failure.	✓ Opioid addiction is a medical condition with a biochemical basis and effective treatments.
✗ Detox is a sufficient treatment for opioid addiction.	✓ Detox alone is not recommended. FDA-approved medications save lives and should be a part of all treatment regimens.
✗ Methadone and buprenorphine treatments are just replacing one drug with another.	✓ Medication assisted treatment reduces craving and prevents withdrawal. Medications reduce opioid related death by up to 50%.
✗ One has to be in an addiction treatment program in order to access medications for opioid use disorder.	✓ Medications such as buprenorphine and naltrexone can be prescribed by addiction specialists and licensed primary care doctors. Ask your doctor if they are licensed to prescribe buprenorphine.

FOR MORE INFORMATION

- SAMHSA Patient Information
  https://www.samhsa.gov/medication-assisted-treatment/treatment
- National Institutes of Health
  https://www.drugabuse.gov/publications/research-reports/medications-to-treat-opioid-addiction/overview

Authors: Michael A. Incze, MD, MSEd; Scott Steiger, MD

Published Online: March 18, 2019. doi:10.1001/jamainternmed.2019.0014

Author Affiliations: Department of Medicine, University of California, San Francisco (Incze, Steiger); *JAMA* Internal Medicine (Incze).

Conflict of Interest Disclosures: None reported.

Section Editor: Michael Incze, MD, MSEd.

What You Need to Know About Opioid Pain Medicines

This guide is for you! Keep this guide and the Medication Guide that comes with your medicine so you can better understand what you need to know about your opioid pain medicine. Go over this information with your healthcare provider. Then, ask your healthcare provider about anything that you do not understand.

What are opioids?

Opioids are strong prescription medicines that are used to manage severe pain.

What are the serious risks of using opioids?

- Opioids have serious risks of addiction and overdose.
- **Too much opioid medicine in your body can cause your breathing to stop – which could lead to death.** This risk is greater for people taking other medicines that make you feel sleepy or people with sleep apnea.
- **Addiction** is when you crave drugs (like opioid pain medicines) because they make you feel good in some way. You keep taking the drug even though you know it is not a good idea and bad things are happening to you. Addiction is a brain disease that may require ongoing treatment.

Risk Factors for Opioid Abuse:

- You have:
  - » a history of addiction
  - » a family history of addiction
- You take medicines to treat mental health problems
- You are under the age of 65 (although anyone can abuse opioid medicines)

- **You can get addicted to opioids even though you take them exactly as prescribed, especially if taken for a long time.**
- If you think you might be addicted, talk to your healthcare provider right away.
- If you take an opioid medicine for more than a few days, your body becomes physically "dependent." This is normal and it means your body has gotten used to the medicine. You must taper off the opioid medicine (slowly take less medicine) when you no longer need it to avoid withdrawal symptoms.

How can I take opioid pain medicine safely?

- Tell your healthcare provider about **all** the medicines you are taking, including vitamins, herbal supplements, and other over-the-counter medicines.
- Read the Medication Guide that comes with your prescription.
- Take your opioid medicine exactly as prescribed.
- Do not cut, break, chew, crush, or dissolve your medicine. If you cannot swallow your medicine whole, talk to your healthcare provider.
- When your healthcare provider gives you the prescription, ask:
  - » How long should I take it?
  - » What should I do if I need to taper off the opioid medicine (slowly take less medicine)?
- Call your healthcare provider if the opioid medicine is not controlling your pain. Do not increase the dose on your own.
- Do not share or give your opioid medicine to anyone else. Your healthcare provider selected this opioid and the dose just for you. A dose that is okay for you could cause an overdose and death for someone else. Also, it is against the law.
- Store your opioid medicine in a safe place where it cannot be reached by children or stolen by family or visitors to your home. Many teenagers like to experiment with pain medicines. Use a lock- box to keep your opioid medicine safe. Keep track of the amount of medicine you have.

- Do not operate heavy machinery until you know how your opioid medicine affects you. Your opioid medicine can make you sleepy, dizzy, or lightheaded.

What should I avoid taking while I am taking opioids?

Unless prescribed by your healthcare provider, you should avoid taking alcohol or any of the following medicines with an opioid because it may cause you to stop breathing, which can lead to death:

- Alcohol: Do not drink any kind of alcohol while you are taking opioid medicines.
- Benzodiazepines (like Valium or Xanax)
- Muscle relaxants (like Soma or Flexeril)
- Sleep medicines (like Ambien or Lunesta)
- Other prescription opioid medicines

What other options are there to help with my pain?

Opioids are not the only thing that can help you control your pain. Ask your healthcare provider if your pain might be helped with a non-opioid medication, physical therapy, exercise, rest, acupuncture, types of behavioral therapy, or patient self-help techniques.

What is naloxone?

- Naloxone is a medicine that treats opioid overdose. It is sprayed inside your nose or injected into your body.
- Use naloxone if you have it and call 911 or go to the emergency room right away if:
  - You or someone else has taken an opioid medicine and is having trouble breathing, is short of breath, or is unusually sleepy
  - A child has accidentally taken the opioid medicine or you think they might have
- Giving naloxone to a person, even a child, who has not taken an opioid medicine will not hurt them.

Naloxone is never a substitute for emergency medical care. Always call 911 or go to the emergency room if you've used or given naloxone.

Where can I get naloxone?

- There are some naloxone products that are designed for people to use in their home.
- Naloxone is available in pharmacies. Ask your healthcare provider about how you can get naloxone. In some states, you may not need a prescription.
- When you get your naloxone from the pharmacy, read the **Patient Information** on how to use naloxone and ask the pharmacist if anything is unclear.
- Tell your family about your naloxone and keep it in a place where you or your family can get to it in an emergency.

When you no longer need your opioid medicine, dispose of it as quickly as possible. The Food and Drug Administration recommends that most opioid medicines be promptly flushed down the toilet when no longer needed, unless a drug take-back option is immediately available. A list of the opioid medicines that can be flushed down the toilet is found here: https://www.fda.gov/drugdisposal

What things should I know about the specific opioid medicine that I am taking?

- Your healthcare provider has prescribed _____ for you. Read the Medication Guide for this medicine, which is information provided by your pharmacy.
- Remember this other important information about your opioid medicine:

Dosing instructions: _____

Any specific interactions with your medicines: _____

_____

What if I have more questions?

- Read the Medication Guide that comes with your opioid medicine prescription for more specific information about your medicine.
- Talk to your healthcare provider or pharmacist and ask them any questions you may have.
- Visit: www.fda.gov/opioids for more information about opioid medicines.

HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics

This *HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics* provides advice to clinicians who are contemplating or initiating a reduction in opioid dosage or discontinuation of long-term opioid therapy for chronic pain. In each case the clinician should review the risks and benefits of the current therapy with the patient, and decide if tapering is appropriate based on individual circumstances.

After increasing every year for more than a decade, annual opioid prescriptions in the United States peaked at 255 million in 2012 and then decreased to 191 million in 2017.[i] More judicious opioid analgesic prescribing can benefit individual patients as well as public health when opioid analgesic use is limited to situations where benefits of opioids are likely to outweigh risks. At the same time opioid analgesic prescribing changes, such as dose escalation, dose reduction or discontinuation of long-term opioid analgesics, have potential to harm or put patients at risk if not made in a thoughtful, deliberative, collaborative, and measured manner.

Risks of rapid opioid taper

- Opioids should not be tapered rapidly or discontinued suddenly due to the risks of significant opioid withdrawal.
- Risks of rapid tapering or sudden discontinuation of opioids in physically dependent[ii] patients include acute withdrawal symptoms, exacerbation of pain, serious psychological distress, and thoughts of suicide.[1] Patients may seek other sources of opioids, potentially including illicit opioids, as a way to treat their pain or withdrawal symptoms.[1]
- Unless there are indications of a life-threatening issue, such as warning signs of impending overdose, HHS does not recommend abrupt opioid dose reduction or discontinuation.

Whether or not opioids are tapered, safe and effective nonopioid treatments should be integrated into patients' pain management plans based on an individualized assessment of benefits and risks considering the patient's diagnosis, circumstances, and unique needs.[2,3,4] Coordination across the health care team is critical. Clinicians have a responsibility to provide or arrange for coordinated management of patients' pain and opioid-related problems, and they should never abandon patients.[2] More specific guidance follows, compiled from published guidelines (the *CDC Guideline for Prescribing Opioids for Chronic Pain*[2] and the *VA/DoD Clinical Practice Guideline for Opioid Therapy for Chronic Pain*[3]) and from practices endorsed in the peer-reviewed literature.

Consider[iii] tapering to a reduced opioid dosage, or tapering and discontinuing opioid therapy, when

- Pain improves[3]
- The patient requests dosage reduction or discontinuation[2,3,5]
- Pain and function are not meaningfully improved[2,3,5]
- The patient is receiving higher opioid doses without evidence of benefit from the higher dose[2,3]
- The patient has current evidence of opioid misuse[3,5]
- The patient experiences side effects[iv] that diminish quality of life or impair function[3]
- The patient experiences an overdose or other serious event (e.g., hospitalization, injury),[2,5] or has warning signs for an impending event such as confusion, sedation, or slurred speech[2,6]
- The patient is receiving medications (e.g., benzodiazepines) or has medical conditions (e.g., lung disease, sleep apnea, liver disease, kidney disease, fall risk, advanced age) that increase risk for adverse outcomes[3,5]
- The patient has been treated with opioids for a prolonged period (e.g., years), and current benefit-harm balance is unclear

---

[i] https://www.cdc.gov/drugoverdose/maps/rxrate-maps.html

[ii] Physical dependence occurs with daily, around-the-clock use of opioids for more than a few days and means that the body has adapted to the drug, requiring more of it to achieve a certain effect (tolerance). Patients with physical dependence will experience physical and/or psychological symptoms if drug use is abruptly ceased (withdrawal).

[iii] Additional tools to help weigh decisions about continuing opioid therapy are available: Assessing Benefits and Harms of Opioid Therapy, Pain Management Opioid Taper Decision Tool, and Tapering Opioids for Chronic Pain.

[iv] e.g., drowsiness, constipation, depressed cognition

Important considerations prior to deciding to taper

Overall, following voluntary reduction of long-term opioid dosages, many patients report improvements in function, sleep, anxiety, and mood without worsening pain or even with decreased pain levels.[4,7,8,9,10,11] Other patients report increased pain, insomnia, anxiety, and depression.[4,7,9,12] The duration of increased pain related to hyperalgesia or opioid withdrawal is unpredictable and may be prolonged in some patients.[12] Decisions to continue or reduce opioids for pain should be based on individual patient needs.[2,13] Consider whether opioids continue to meet treatment goals, whether opioids are exposing the patient to an increased risk for serious adverse events or opioid use disorder, and whether benefits continue to outweigh risks of opioids.[2,13]

- Avoid insisting on opioid tapering or discontinuation when opioid use may be warranted (e.g., treatment of cancer pain, pain at the end of life, or other circumstances in which benefits outweigh risks of opioid therapy). ***The CDC Guideline for Prescribing Opioids for Chronic Pain does not recommend opioid discontinuation when benefits of opioids outweigh risks.***[2,4,13]
- Avoid misinterpreting cautionary dosage thresholds as mandates for dose reduction.[4] While, for example, the CDC Guideline recommends avoiding or carefully justifying *increasing* dosages above 90 MME/day, it does not recommend abruptly reducing opioids from higher dosages.[2,4] Consider individual patient situations.
- Some patients using both benzodiazepines and opioids may require tapering one or both medications to reduce risk for respiratory depression. Tapering decisions and plans need to be coordinated with prescribers of both medications.[2] If benzodiazepines are tapered, they should be tapered gradually[v] due to risks of benzodiazepine withdrawal (anxiety, hallucinations, seizures, delirium tremens, and, in rare cases, death).[2]
- Avoid dismissing patients from care. This practice puts patients at high risk and misses opportunities to provide life-saving interventions, such as medication-assisted treatment for opioid use disorder.[2,4,13] Ensure that patients continue to receive coordinated care.
- There are serious risks to noncollaborative tapering in physically dependent patients, including acute withdrawal, pain exacerbation, anxiety, depression, suicidal ideation, self-harm, ruptured trust, and patients seeking opioids from high-risk sources.[1,14]

Important steps prior to initiating a taper

- Commit to working with your patient to improve function and decrease pain.[2,7] Use accessible, affordable nonpharmacologic and nonopioid pharmacologic treatments.[2,3,7] Integrating behavioral and nonopioid pain therapies before and during a taper can help manage pain[10] and strengthen the therapeutic relationship.
- Depression, anxiety, and post-traumatic stress disorder (PTSD) can be common in patients with painful conditions, especially in patients receiving long-term opioid therapy.[15] Depressive symptoms predict taper dropout.[7,8] Treating comorbid mental disorders can improve the likelihood of opioid tapering success.
- If your patient has serious mental illness, is at high suicide risk, or has suicidal ideation, offer or arrange for consultation with a behavioral health provider before initiating a taper.[3,5]
- If a patient exhibits opioid misuse behavior or other signs of opioid use disorder, assess for opioid use disorder using DSM-5 criteria.[2,5] If criteria for opioid use disorder are met (especially if moderate or severe), offer or arrange for medication-assisted[vi] treatment.[2,3]
- Access appropriate expertise if considering opioid tapering or managing opioid use disorder during pregnancy. Opioid withdrawal risks include spontaneous abortion and premature labor. For pregnant women with opioid use disorder, medication-assisted treatment is preferred over detoxification.[2]
- ***Advise patients that there is an increased risk for overdose on abrupt return to a previously prescribed higher dose.***[2] Strongly caution that it takes as little as a week to lose tolerance and that there is a risk of overdose if they return to their original dose.[2,3,5,6] Provide opioid overdose education and consider offering naloxone.[2]

Share decision-making with patients

- Discuss with patients their perceptions of risks, benefits, and adverse effects of continued opioid therapy, and include patient concerns in taper planning. For patients at higher risk of overdose based on opioid dosages, review benefits and risks of continued high-dose opioid therapy.[2,5]
- If the current opioid regimen does not put the patient at imminent risk, tapering does not need to occur immediately.[4] Take time to obtain patient buy-in.[14]
- For patients who agree to reduce opioid dosages, collaborate with the patient on a tapering plan.[2] Tapering is more likely to be successful when patients collaborate in the taper.[vii] Include patients in decisions, such as which medication will be decreased first and how quickly tapering will occur.

[v] Example benzodiazepine tapers and clinician guidance are available at https://www.pbm.va.gov/PBM/AcademicDetailingService/Documents/Benzodiazepine_Provider_AD_%20Risk_Discussion_Guide.pdf

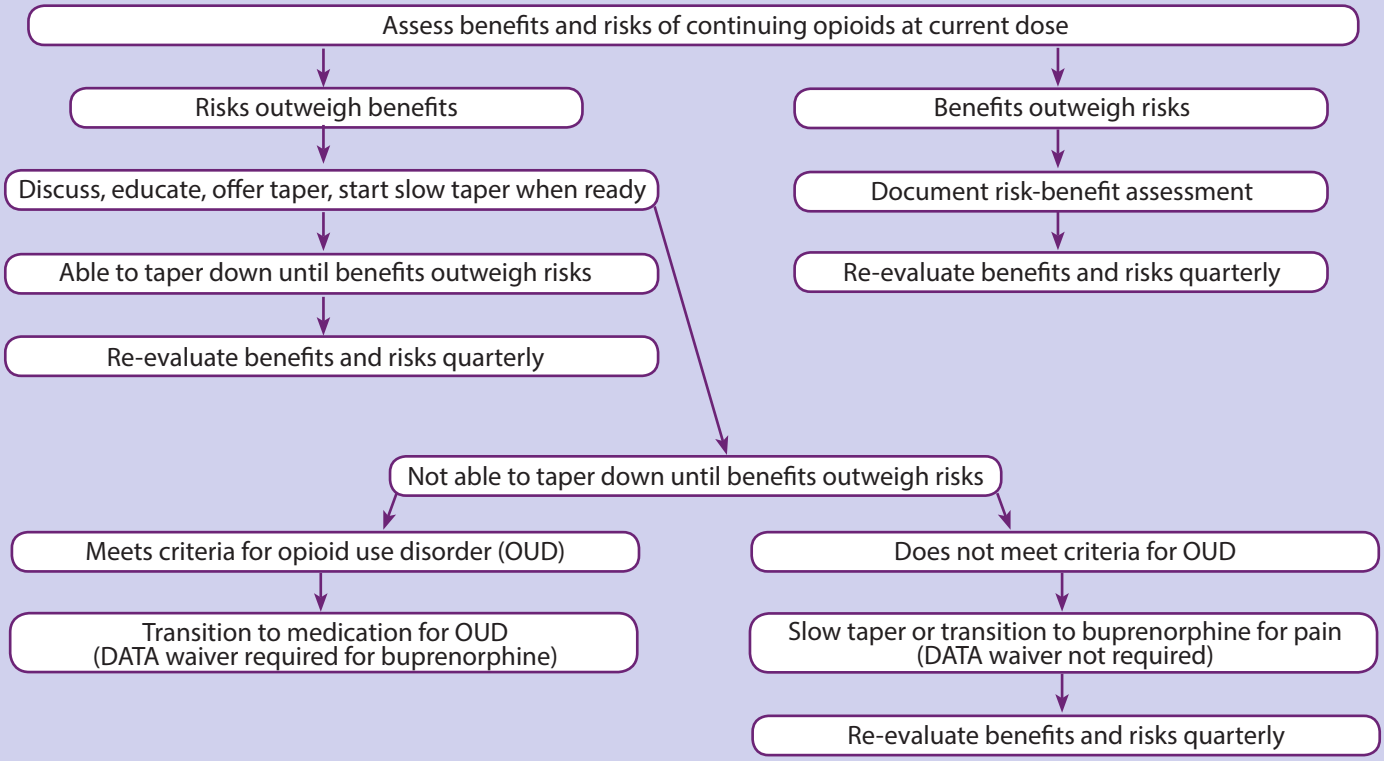
[vi] See SAMHSA's TIP 63: Medications for Opioid Use Disorder, SAMHSA's Buprenorphine Practitioner Locator, and SAMHSA's Opioid Treatment Program Directory

[vii] A recent systematic review found that when opioids were tapered with buy-in from patients who agreed to decrease dosage or discontinue therapy, pain, function, and quality of life improved after opioid dose reduction.[10]

Individualize the taper rate

- When opioid dosage is reduced, a taper slow enough to minimize opioid withdrawal symptoms and signs[viii] should be used.[2] Tapering plans should be individualized based on patient goals and concerns.[2,3,5,6]
- The longer the duration of previous opioid therapy, the longer the taper may take. Common tapers involve dose reduction of 5% to 20% every 4 weeks.[3,5]
  - **Slower tapers** (e.g., 10% per month or slower) are often better tolerated than more rapid tapers, especially following opioid use for more than a year.[2] Longer intervals between dose reductions allow patients to adjust to a new dose before the next reduction.[5] Tapers can be completed over several months to years depending on the opioid dose. See "slower taper" example here.
  - **Faster tapers** can be appropriate for some patients. A decrease of 10% of the original dose per week or slower (until 30% of the original dose is reached, followed by a weekly decrease of 10% of the remaining dose) is less likely to trigger withdrawal[7] and can be successful for some patients, particularly after opioid use for weeks to months rather than years. See "faster taper" example here.
- At times, tapers might have to be paused and restarted again when the patient is ready.[2] Pauses may allow the patient time to acquire new skills for management of pain and emotional distress, introduction of new medications, or initiation of other treatments, while allowing for physical adjustment to a new dosage.[3,5]
- Tapers may be considered successful as long as the patient is making progress, however slowly, towards a goal of reaching a safer dose,[2] or if the dose is reduced to the minimal dose needed.
- Once the smallest available dose is reached, the interval between doses can be extended.[2,5,7] Opioids may be stopped, if appropriate, when taken less often than once a day.[2,7] See "example tapers for opioids" here.
- More rapid tapers (e.g., over 2-3 weeks[16]) might be needed for patient safety when the risks of continuing the opioid outweigh the risks of a rapid taper (e.g., in the case of a severe adverse event such as overdose).
- Ultrarapid detoxification under anesthesia is associated with substantial risks and ***should not be used***.[2]

Opioid Tapering Flowchart



Adapted from Oregon Pain Guidance. Tapering – Guidance & Tools. Available at https://www.oregonpainguidance.org/guideline/tapering/.

DSM-5 Opioid Use Disorder

A problematic pattern of opioid use leading to clinically significant impairment or distress, as manifested by at least 2 of the following, occurring within a 12-month period:

1. Opioids are often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control opioid use.
3. A great deal of time is spent in activities necessary to obtain, use, or recover from the effects of opioids.
4. Craving, or a strong desire or urge to use opioids.
5. Recurrent opioid use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued opioid use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of opioids.
7. Important social, occupational, or recreational activities are given up or reduced because of opioid use.
8. Recurrent opioid use in situations in which it is physically hazardous.
9. Continued opioid use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
10. Tolerance, as defined by either of the following:
    a. A need for markedly increased amounts of opioids to achieve intoxication or desired effect, or
    b. Markedly diminished effect with continued use of the same amount of an opioid.

    Note: This criterion is not considered to be met for those taking opioids solely under appropriate medical supervision.
11. Withdrawal, as manifested by either of the following:
    a. The characteristic opioid withdrawal syndrome, or
    b. Opioids (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.

    Note: This criterion is not considered to be met for those taking opioids solely under appropriate medical supervision.

Mild: Presence of 2-3 symptoms
Moderate: Presence of 4-5 symptoms
Severe: Presence of 6 or more symptoms

Treat symptoms of opioid withdrawal

- If tapering is done gradually, withdrawal symptoms should be minimized and manageable.
- Expectation management is an important aspect of counseling patients through withdrawal.
- Significant opioid withdrawal symptoms may indicate a need to pause or slow the taper rate.
- Onset of withdrawal symptoms depends on the duration of action of the opioid medication used by the patient. Symptoms can begin as early as a few hours after the last medication dose or as long as a few days, depending on the duration of action.[7] Early withdrawal symptoms (e.g., anxiety, restlessness, sweating, yawning, muscle aches, diarrhea and cramping[viii]) usually resolve after 5-10 days but can take longer.[5]
- Some symptoms (e.g., dysphoria, insomnia, irritability) can take weeks to months to resolve.[5]
- Short-term oral medications can help manage withdrawal symptoms, especially when prescribing faster tapers.[5] These include alpha-2 agonists[ix] for the management of autonomic signs and symptoms (sweating, tachycardia), and symptomatic medications[x] for muscle aches, insomnia, nausea, abdominal cramping, or diarrhea.[5]

Provide behavioral health support

- Make sure patients receive appropriate psychosocial support.[2,3,6,11] Ask how you can support the patient.[5]
- Acknowledge patient fears about tapering.[5] While motives for tapering vary widely, fear is a common theme. Many patients fear stigma, withdrawal symptoms, pain, and/or abandonment.[13,18]
- Tell patients "I know you can do this" or "I'll stick by you through this." Make yourself or a team member available to the patient to provide support, if needed.[3,6] Let patients know that while pain might get worse at first, many people have improved function without worse pain after tapering opioids.[7,8,9,10,11]
- Follow up frequently. Successful tapering studies have used at least weekly follow up.[10]
- Watch closely for signs of anxiety, depression, suicidal ideation, and opioid use disorder and offer support or referral as needed.[2,3,6] Collaborate with mental health providers and with other specialists as needed to optimize psychosocial support for anxiety related to the taper.[2]

[viii] Acute opioid withdrawal symptoms and signs include drug craving, anxiety, restlessness, insomnia, abdominal pain or cramps, nausea, vomiting, diarrhea, anorexia, sweating, dilated pupils, tremor, tachycardia, piloerection, hypertension, dizziness, hot flashes, shivering, muscle or joint aches, runny nose, sneezing, tearing, yawning, and dysphoria.[7] Worsening of pain is a frequent symptom of withdrawal that may be prolonged but tends to diminish over time for many patients.[7]

[ix] Alpha-2 agonists clonidine and lofexidine are more effective than placebo in ameliorating opioid withdrawal.[17] There is not similar research in patients tapering from long-term opioid treatment for pain.[7] Lofexidine has an FDA-approved indication for use up to 14 days for "mitigation of opioid withdrawal symptoms to facilitate abrupt opioid discontinuation in adults."

[x] NSAIDs, acetaminophen, or topical menthol/methylsalicilate for muscle aches; trazodone for sleep disturbance; prochlorperazine, promethazine, or ondansetron for nausea; dicyclomine for abdominal cramping; and loperamide or bismuth subsalicylate for diarrhea.[5]

Special populations

- If patients experience unanticipated challenges to tapering, such as inability to make progress despite intention to taper or opioid-related harm, assess for opioid use disorder using DSM-5 criteria.[2] If patients meet criteria for opioid use disorder (especially if moderate or severe), offer or arrange medication-assisted treatment.[2,3]
- If patients on high opioid dosages are unable to taper despite worsening pain and/or function with opioids, whether or not opioid use disorder criteria are met, consider transitioning to buprenorphine.[4,12] Buprenorphine is a partial opioid agonist that can treat pain as well as opioid use disorder,[19] and has other properties that may be helpful,[3] including less opioid-induced hyperalgesia[12] and easier withdrawal than full mu-agonist opioids,[3] and less respiratory depression than other long-acting opioids.[20] Buprenorphine can then be continued or tapered gradually.[12] Transitioning from full-agonist opioids requires attention to timing of the initial buprenorphine dose to avoid precipitating withdrawal.[xi]

  Consultation with a clinician experienced in use of buprenorphine is warranted if unfamiliar with its initiation. SAMHSA's Providers Clinical Support System offers training and technical assistance as well as mentors to assist those who need to taper opioids and may have additional questions.

- Closely monitor patients who are unable or unwilling to taper and who continue on high-dose or otherwise high-risk opioid regimens. Mitigate overdose risk (e.g., provide overdose education and naloxone). Use periodic and strategic motivational questions and statements to encourage movement toward appropriate therapeutic changes.[14]

[xi] To avoid precipitating protracted withdrawal from full agonist opioids when starting buprenorphine, patients need to be in mild to moderate withdrawal (including Clinical Opioid Withdrawal Score (COWS) objective signs) before the first buprenorphine dose.[12] To do this, wait at least 8 to 12 hours after the last dose of short-acting full agonist opioids before the first dose of buprenorphine.[12] Buprenorphine buccal film (Belbuca) and buprenorphine transdermal system (Butrans) have FDA-approved indications for "the management of pain severe enough to require daily, around-the-clock, long-term opioid treatment and for which alternative treatment options are inadequate." The full Belbuca prescribing information and the full Butrans prescribing information include instructions for conversion from full agonist opioids. More time should be allowed before starting buprenorphine following the last dose of long-acting full agonist opioids (e.g., at least 36 hours after last methadone dose); in addition, transition from methadone to buprenorphine is likely to be better tolerated after methadone is gradually tapered to 40mg per day or less.[12] Because the duration of action for analgesia is much shorter than the duration of action for suppression of opioid withdrawal,[21] "split dosing" (e.g., 8mg sublingual tablet twice a day) rather than once a day dosing is used when buprenorphine is provided for pain management.[3,12]

References

1. FDA identifies harm reported from sudden discontinuation of opioid pain medicines and requires label changes to guide prescribers on gradual, individualized tapering. Available at https://www.fda.gov/Drugs/DrugSafety/ucm635038.htm (accessed April 13, 2019)
2. Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain - United States, 2016. MMWR Recomm Rep. 2016 Mar 18;65(1):1-49.
3. Department of Veterans Affairs. Department of Defense. VA/DoD Clinical Practice Guideline for Opioid Therapy for Chronic Pain. Version 3.0 – 2017. Available at https://www.healthquality.va.gov/guidelines/Pain/cot/VADoDOTCPG022717.pdf
4. Kroenke K, Alford DP, Argoff C, et al. Challenges with Implementing the Centers for Disease Control and Prevention Opioid Guideline: A Consensus Panel Report. Pain Med. 2019 Apr 1;20(4):724-735.
5. Veterans Health Administration PBM Academic Detailing Service. Pain Management Opioid Taper Decision Tool_A VA Clinician's Guide. Available at https://www.pbm.va.gov/AcademicDetailingService/Documents/Pain_Opioid_Taper_Tool_IB_10_939_P96820.pdf (accessed September 17, 2019)
6. Pocket Guide: Tapering Opioids for Chronic Pain – CDC. Available at https://www.cdc.gov/drugoverdose/pdf/clinical_pocket_guide_tapering-a.pdf (accessed March 27, 2019)
7. Berna C, Kulich RJ, Rathmell JP. Tapering Long-term Opioid Therapy in Chronic Noncancer Pain: Evidence and Recommendations for Everyday Practice. Mayo Clin Proc. 2015 Jun;90(6):828-42.
8. Darnall BD, Ziadni MS, Stieg RL, Mackey IG, Kao MC, Flood P. Patient-Centered Prescription Opioid Tapering in Community Outpatients With Chronic Pain. JAMA Intern Med. 2018 May 1;178(5):707-708.
9. Goesling J, DeJonckheere M, Pierce J, Williams DA, Brummett CM, Hassett AL, Clauw DJ. Opioid cessation and chronic pain: perspectives of former opioid users. Pain. 2019 May;160(5):1131-1145.
10. Frank JW, Lovejoy TI, Becker WC, et al. Patient Outcomes in Dose Reduction or Discontinuation of Long-Term Opioid Therapy: A Systematic Review. Ann Intern Med. 2017 Aug 1;167(3):181-191.
11. Sullivan MD, Turner JA, DiLodovico C et al. Prescription Opioid Taper Support for Outpatients with Chronic Pain: A Randomized Controlled Trial. J Pain. 2017 Mar;18(3):308-318.
12. Manhapra A, Arias AJ, Ballantyne JC. The conundrum of opioid tapering in long-term opioid therapy for chronic pain: A commentary. Subst Abus. 2018;39(2):152-161.
13. U.S. Department of Health and Human Services. Pain Management Best Practices Inter-Agency Task Force Report: Updates, Gaps, Inconsistencies, and Recommendations. May 2019. Available at https://www.hhs.gov/ash/advisory-committees/pain/index.html.
14. Dowell D, Haegerich TM. Changing the Conversation About Opioid Tapering. Ann Intern Med. 2017 Aug 1;167(3):208-209.
15. Sullivan MD. Depression Effects on Long-term Prescription Opioid Use, Abuse, and Addiction. Clin J Pain. 2018 Sep;34(9):878-884.
16. Washington State Agency Medical Directors' Group. AMDG 2015 interagency guideline on prescribing opioids for pain. Olympia, WA: Washington State Agency Medical Directors' Group; 2015. Available at http://www.agencymeddirectors.wa.gov/Files/2015AMDGOpioidGuideline.pdf (accessed September 17, 2019)
17. Gowing L, Farrell M, Ali R, White JM. Alpha2-adrenergic agonists for the management of opioid withdrawal. Cochrane Database Syst Rev. 2016 May 3;(5):CD002024. Available at https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002024.pub5/full (accessed September 17, 2019)
18. Henry, SG, Paterniti, DA, Feng, B, et al. Patients' experience with opioid tapering: A conceptual model with recommentations for clinicians. J Pain. 2019; 20(2): 181-191.
19. Pade PA, Hoffman RM, Geppert CM. Prescription opioid abuse, chronic pain, and primary care: a Co-occurring Disorders Clinic in the chronic disease model. J Subst Abuse Treat. 2012 Dec;43(4):446-50.
20. Dahan A, Yassen A, Romberg R, Sarton E, Teppema L, Olofsen E, Danhof M. Buprenorphine induces ceiling in respiratory depression but not in analgesia. Br J Anaesth. 2006;96(5):627. Epub 2006 Mar 17.
21. Alford DA, Compton P, Samet JH. Acute Pain Management for Patients Receiving Maintenance Methadone or Buprenorphine Therapy. Ann Intern Med. 2006 Jan 17; 144(2): 127–134.

The U.S. Department of Health and Human Services Working Group on Patient-Centered Reduction or Discontinuation of Long-term Opioid Analgesics, chartered under the Assistant Secretary for Health ADM Brett Giroir, developed this guide:

Co-chairs

Deborah Dowell, MD, MPH
CAPT, US Public Health Service
Centers for Disease Control and Prevention

Christopher Jones, PharmD, DrPH
CAPT, US Public Health Service
Centers for Disease Control and Prevention

Wilson Compton, MD, MPE
National Institutes of Health

Workgroup members

Elisabeth Kato, MD, MRP
Agency for Healthcare Research and Quality

Joel Dubenitz, PhD
Office of The Assistant Secretary for Planning and Evaluation

Shari Ling, MD
Centers for Medicare and Medicaid Services

Daniel Foster, DO, MS, MPH
Food and Drug Administration

Sharon Hertz, MD
Food and Drug Administration

Marta Sokolowska, PhD
Food and Drug Administration

Judith Steinberg, MD, MPH
Health Resources and Services Administration

Meena Vythilingam, MD
CAPT, US Public Health Service
Office of the Assistant Secretary for Health

Thomas Clarke, PhD
Substance Abuse and Mental Health Services Administration

October 2019

U.S. Department of Health and Human Services

VIEWPOINT

Patient-Centered Reduction or Discontinuation of Long-term Opioid Analgesics
The HHS Guide for Clinicians

Deborah Dowell, MD, MPH
US Public Health Service, National Center for Injury Prevention and Control, US Centers for Disease Control and Prevention, Atlanta, Georgia.

Wilson M. Compton, MD, MPE
National Institute on Drug Abuse, National Institutes of Health, Bethesda, Maryland.

Brett P. Giroir, MD
US Public Health Service, Office of the Assistant Secretary for Health, US Department of Health and Human Services, Washington, DC.

Author Audio Interview

Related article page 1912

Supplemental content

Corresponding Author: Deborah Dowell, MD, MPH, US Public Health Service, National Center for Injury Prevention and Control, US Centers for Disease Control and Prevention, 4770 Buford Hwy NE, Atlanta, GA 30341 (ddowell@cdc.gov).

Prescription opioid use continues to contribute to significant morbidity and mortality in the United States.[1-4] In 2017, 17 029 of the 47 600 opioid-related overdose deaths involved prescription opioids.[5] Nearly 2 million individuals in the United States have a prescription opioid use disorder.[1] At the same time, approximately 11% of US adults report daily pain,[1] and an estimated 3% to 4% use opioids long-term to help manage chronic pain.[1] Although limiting opioid analgesic prescribing to situations for which benefits outweigh risks can improve individual and population health, rapidly decreasing or abruptly discontinuing long-term opioid analgesics can significantly increase the risk of adverse consequences, including opioid-related hospitalizations and emergency department visits.[3]

Nonopioid strategies may provide equally or more effective pain relief and lower risks than opioids for most patients with chronic pain and for many with acute conditions.[1] In addition, because the benefits of long-term opioid therapy often diminish over time while the risks do not, the 2016 Centers for Disease Control and Prevention Guideline for Prescribing Opioids for Chronic Pain recommends that clinicians and patients regularly reevaluate benefits and risks of continuing opioid therapy, particularly at higher dosages.[1] Yet, patients may find the idea of reducing or discontinuing opioid therapy anxiety-provoking.[1] Determining when and how to taper opioids can be challenging for clinicians.[6] There is a need for clear guidance to support clinicians in negotiating challenges with changes in opioid prescribing for patients receiving opioid therapy.

There are concerning reports of patients having opioid therapy discontinued abruptly[3] and of clinicians being unwilling to accept new patients who are receiving opioids for chronic pain,[4] which may leave patients at risk for abrupt discontinuation and withdrawal symptoms. Payer and health system policies that misinterpret cautionary dosage thresholds as mandates for dose reduction may result in rapid tapers or abrupt discontinuation of opioids.[7] While evidence on the effectiveness and safety of different strategies to reduce opioid dosage is limited,[6] emerging data suggest that when there is a decision to reduce opioid dosage, certain practices, including integration of nonpharmacologic pain management, behavioral support, and slower tapers, may improve outcomes.[6]

To help clinicians reduce risks and improve outcomes related to opioid dose reduction and discontinuation among patients prescribed opioids to manage pain (particularly chronic pain), the US Department of Health and Human Services (HHS) developed the HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics.[8] A working group composed of experts from HHS agencies considered systematic reviews on opioid tapering and national guidelines on opioid prescribing published after 2014 to identify and summarize evidence-based clinical practices and guidance relevant to opioid dosage reduction or discontinuation. Six experts external to HHS reviewed the working group's summary and provided input. Guidance is provided to assist clinicians in 8 areas: (1) criteria for considering reducing or discontinuing opioid therapy, (2) considerations prior to deciding to taper opioids, (3) steps to ensure patient safety prior to initiating a taper, (4) shared decision-making with patients, (5) the rate of opioid taper, (6) opioid withdrawal management, (7) behavioral health support, and (8) challenges to tapering.[8] The HHS guide emphasizes the importance of shared decision-making with patients, individualized and slow tapers, and integration of pain management and behavioral support.[8]

Involving patients in decisions regarding continuation or discontinuation of opioid analgesics may improve outcomes. Among studies rated by a systematic review as "good" or "fair" quality, when opioids were tapered following discussion with patients who agreed to taper, pain, function, and quality of life improved after opioid dose reduction.[6] The HHS guide encourages collaborating with patients whenever possible in making decisions about whether to taper opioids and outlines additional opportunities to share decision-making with patients.[8] For example, clinicians can include patients in decisions such as which medication will be decreased first and how quickly tapering will occur.[8]

If there is a decision to taper opioids, integrating behavioral and nonopioid pain therapies before and during a taper can help manage pain and strengthen the therapeutic relationship.[8] Worsening of pain is a frequent symptom of opioid withdrawal that may be prolonged but tends to diminish over time.[8] It can be helpful to counsel patients regarding the transient nature of this effect.[8]

Mental health comorbidities and opioid use disorder are common in patients receiving long-term opioid therapy for chronic pain.[1,8] Symptoms of depression predict taper dropout, and managing comorbid mental health disorders can improve the likelihood of opioid tapering success.[8] The HHS guide and current guidelines recommend that patients who exhibit signs and symptoms of opioid misuse be assessed for opioid use disorder using *Diagnostic and Statistical Manual of Mental Disorders* (*Fifth Edition*) criteria and offered medication treatment if criteria are met, especially if the patient has moderate or severe opioid use disorder.[1,8,9]

The HHS guide and current guidelines emphasize that tapering should be individualized and should ideally proceed slowly enough to minimize opioid withdrawal symptoms and signs.[1,8,9] Physical dependence occurs as early as a few days after consistent opioid use,[1] and when opioids

have been prescribed continuously for longer than a few days, sudden discontinuation may precipitate significant opioid withdrawal.[3] Rapid tapering or sudden discontinuation of opioids in physically dependent patients can also increase risks of psychological distress and opioid-related emergency department visits and hospitalizations, supporting the importance of slow tapering.[3] One study involving 494 patients found that each additional week of tapering time before opioid discontinuation was associated with a 7% relative reduction in the risk of opioid-related emergency department visits or hospitalizations.[3] Although relatively faster tapers (eg, 10% per week) may be successful for some patients who have taken opioids for shorter time periods (eg, weeks to months), slower tapers (eg, ≤10% per month) are often better tolerated when patients have been taking opioids continuously for chronic pain, especially following opioid use for more than a year.[1,8] Slower tapers may require several months to years depending on the opioid dosage.[8] Significant opioid withdrawal symptoms may indicate a need to further slow the taper rate.[8]

Some patients with unanticipated challenges to tapering, such as inability to make progress in tapering despite opioid-related harm, may have undiagnosed opioid use disorder. Thus, it is recommended to assess patients experiencing these challenges for opioid use disorder using *Diagnostic and Statistical Manual of Mental Disorders* (*Fifth Edition*) criteria and offer or arrange for medication treatment if criteria for opioid use disorder are met, especially if it is moderate or severe.[1] Furthermore, patients who do not meet criteria for opioid use disorder but who have an unfavorable risk/benefit profile for continued high-dose opioid use might benefit from transition to buprenorphine (Supplement).[2,8] Buprenorphine is an opioid partial agonist that can be used to manage pain as well as opioid use disorder,[2] and has other properties that may be helpful in the context of long-term opioid therapy,[9] including less respiratory depression and overdose risk than other opioids.[2] The HHS guide provides additional details on transitioning from full agonist opioids to buprenorphine, including attention to timing of the initial buprenorphine dose to avoid precipitating withdrawal from full agonist opioids, dosing for analgesia, and resources available from the Substance Abuse and Mental Health Services Administration, including training, technical assistance, and mentors for clinicians who need to taper opioids and have additional questions.[8]

While safe and effective opioid use and discontinuation can be challenging, the Centers for Disease Control and Prevention guideline and the HHS guide emphasize that clinicians have a responsibility to provide care for or arrange for management of patients' pain and should not abandon patients.[1,8] For patients who are unable or unwilling to taper and who continue receiving high-dose or otherwise high-risk opioid regimens (eg, opioids prescribed concurrently with benzodiazepines), close monitoring and mitigation of overdose risk are recommended.[1,8]

More research is critically needed to define optimal strategies for opioid tapering. Many of the available studies on opioid tapering used uncontrolled designs and are rated low in quality by systematic reviews.[6] One systematic review of patient outcomes after opioid tapering found that of 67 studies identified (11 randomized trials and 56 observational studies), only 3 studies were "good" quality and 13 were "fair" quality.[6] Of note, among the limited set of studies with at least fair-quality evidence, opioid tapering was associated with improved pain, function, and quality of life.[6]

While evidence on the benefits and risks of opioid dose reduction or discontinuation is evolving and evidence on effectiveness of various approaches to tapering is limited,[6] fair- or good-quality studies in which positive outcomes were found following opioid tapering used specific opioid tapering practices[6]; harm has been reported with other practices.[3] Unless there is a life-threatening issue, such as imminent overdose, the benefits of rapidly tapering or abruptly discontinuing opioids are unlikely to outweigh the significant risks of these practices.[3,8] However, following slow, voluntary reduction of long-term opioid dosages, most patients report improvements in function, quality of life, anxiety, and mood without worsening pain or with decreased pain levels.[6]

ARTICLE INFORMATION

Published Online: October 10, 2019. doi:10.1001/jama.2019.16409

Conflict of Interest Disclosures: Dr Compton reported stock holdings in Pfizer, General Electric, and the 3M Company. No other disclosures were reported.

Disclaimer: The conclusions, findings, and opinions expressed by the authors do not necessarily reflect the official position of the US Department of Health and Human Services, the US Public Health Service, the US Centers for Disease Control and Prevention, or the authors' affiliated institutions.

Additional Contributions: The US Department of Health and Human Services (HHS) Working Group on Patient-Centered Reduction or Discontinuation of Long-term Opioid Analgesics was responsible for developing the HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics. Co-chairs: Deborah Dowell, MD, MPH (US Centers for Disease Control and Prevention [CDC]); Christopher Jones, PharmD, DrPH (CDC); and Wilson Compton, MD, MPE (National Institutes of Health). Group members: Elisabeth Kato, MD, MRP (Agency for Healthcare Research and Quality); Joel Dubenitz, PhD (Office of the Assistant Secretary for Planning And Evaluation); Shari Ling, MD (US Centers for Medicare & Medicaid Services); Daniel Foster, DO, MS, MPH (US Food and Drug Administration [FDA]); Sharon Hertz, MD (FDA); Marta Sokolowska, PhD (FDA); Judith Steinberg, MD, MPH (Health Resources and Services Administration); Thomas Clarke, PhD (Substance Abuse and Mental Health Services Administration); and Meena Vythilingam, MD (Office of the Assistant Secretary for Health). We also acknowledge many staff across HHS as well as Roger Chou, MD, Beth Darnall, PhD, Robert Kerns, PhD, Erin Krebs, MD, MPH, Mark Sullivan, MD, PhD, and Ajay Manhapra, MD, for conducting reviews of the HHS guide.

REFERENCES

1. Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain: United States, 2016. *MMWR Recomm Rep*. 2016;65(1):1-49.

2. Chou R, Ballantyne J, Lembke A. Rethinking opioid dose tapering, prescription opioid dependence, and indications for buprenorphine [published online August 27, 2019]. *Ann Intern Med*.

3. Mark TL, Parish W. Opioid medication discontinuation and risk of adverse opioid-related health care events. *J Subst Abuse Treat*. 2019;103:58-63. doi:10.1016/j.jsat.2019.05.001

4. Lagisetty PA, Healy N, Garpestad C, et al. Access to primary care clinics for patients with chronic pain receiving opioids. *JAMA Netw Open*. 2019;2(7):e196928.

5. Scholl L, Seth P, Kariisa M, et al. Drug and opioid-involved overdose deaths - United States, 2013-2017. *MMWR Morb Mortal Wkly Rep*. 2018;67(5152):1419-1427.

6. Frank JW, Lovejoy TI, Becker WC, et al. Patient outcomes in dose reduction or discontinuation of long-term opioid therapy. *Ann Intern Med*. 2017;167(3):181-191.

7. Dowell D, Haegerich T, Chou R. No shortcuts to safer opioid prescribing. *N Engl J Med*. 2019;380(24):2285-2287. doi:10.1056/NEJMp1904190

8. US Department of Health and Human Services. HHS guide for clinicians on the appropriate dosage reduction or discontinuation of long-term opioid analgesics. https://www.hhs.gov/opioids/treatment/clinicians-guide-opioid-dosage-reduction/index.html.

9. US Department of Veterans Affairs; US Department of Defense. VA/DoD clinical practice guideline for opioid therapy for chronic pain: version 3.0. https://www.healthquality.va.gov/guidelines/Pain/cot/ VADoDOTCPG022717.pdf. Published February 2017. Accessed October 1, 2019.

Opioid Taper Decision Tool

U.S. Department of Veterans Affairs
Veterans Health Administration
PBM Academic Detailing Service

Pages 3, 7, and 11 republished by NEJM Knowledge+ with permission from the U.S. Department of Veterans Affairs. Original can be found at https://www.pbm.va.gov/AcademicDetailingService/Documents/Pain_Opioid_Taper_Tool_IB_10_939_P96820.

Possible reasons to re-evaluate the risks and benefits of continuing opioid therapy:

Opioids are associated with many risks and it may be determined that they are not indicated for pain management for a particular patient.[1]

- No pain reduction, no improvement in function or patient requests to discontinue therapy
- Severe unmanageable adverse effects (e.g., drowsiness, constipation, cognitive impairment)
- Dosage indicates high risk of adverse events (e.g., doses of 90 MEDD* and higher)

- Non-adherence to the treatment plan or unsafe behaviors** (e.g., early refills, lost/stolen prescription, buying or borrowing opioids, failure to obtain or aberrant UDT***)
- Concerns related to an increased risk of SUD**** (e.g., behaviors, age <30, family history, personal history of SUD†)
- Overdose event involving opioids

- Medical comorbidities that can increase risk (e.g., lung disease, sleep apnea, liver disease, renal disease, fall risk, advanced age)
- Concomitant use of medications that increase risk (e.g., benzodiazepines)
- Mental health comorbidities that can worsen with opioid therapy (e.g., PTSD, depression, anxiety)

Consider Tapering Opioid

STOP **Prior to any changes in therapy, discuss the risks of continued use, along with possible benefits, with the patient. Establish a plan to consider dose reduction, consultation with specialists, or consider alternative pain management strategies.**

*Morphine equivalent daily dose
**Consider assessment for opioid use disorder (OUD)
*** Urine drug test
****Substance use disorder
†Personal history of SUD includes alcohol use disorder (AUD), opioid use disorder (OUD), and/or a use disorder involving other substances

Example Tapers for Opioids[5-9]

Slowest Taper (over years)	Slower Taper (over months or years)	Faster Taper (over weeks)****	Rapid Taper (over days)****
Reduce by 2 to 10% every 4 to 8 weeks with pauses in taper as needed *Consider for patients taking high doses of long-acting opioids for many years*	Reduce by 5 to 20% every 4 weeks with pauses in taper as needed **MOST COMMON TAPER**	Reduce by 10 to 20% every week	Reduce by 20 to 50% of first dose if needed, then reduce by 10 to 20% every day
Ex: morphine SR 90 mg Q8h = 270 MEDD **Month 1:** 90 mg SR qam, 75 mg noon, 90 mg qpm [5% reduction]* **Month 2:** 75 mg SR qam, 75 mg noon, 90 mg qpm **Month 3:** 75 mg SR (60 mg+15 mg) Q8h **Month 4:** 75 mg SR qam, 60 mg noon, 75 mg qpm **Month 5:** 60 mg SR qam, 60 mg noon, 75 mg qpm **Month 6:** 60 mg SR Q8h **Month 7:** 60 mg SR qam, 45 mg noon, 60 mg qpm **Month 8:** 45 mg SR qam, 45 mg noon, 60 mg qpm **Month 9:** 45 mg SR Q8h**	Ex: morphine SR 90 mg Q8h = 270 MEDD **Month 1:** 75 mg (60 mg+15 mg)SR Q8h [16% reduction] **Month 2:** 60 mg SR Q8h **Month 3:** 45 mg SR Q8h **Month 4:** 30 mg SR Q8h **Month 5:** 15 mg SR Q8h **Month 6:** 15 mg SR Q12h **Month 7:** 15mg SR QHS, then stop***	Ex: morphine SR 90 mg Q8h = 270 MEDD **Week 1:** 75 mg SR Q8h [16% reduction] **Week 2:** 60 mg SR (15 mg x 4) Q8h **Week 3:** 45 mg SR (15 mg x 3) Q8h **Week 4:** 30 mg SR (15 mg x 2) Q8h **Week 5:** 15 mg SR Q8h **Week 6:** 15 mg SR Q12h **Week 7:** 15 mg SR QHS x 7 days, then stop***	Ex: morphine SR 90 mg Q8h = 270 MEDD **Day 1:** 60 mg SR (15 mg x 4) Q8h [33% reduction] **Day 2:** 45 mg SR (15 mg x 3) Q8h **Day 3:** 30 mg SR (15 mg x 2) Q8h **Day 4:** 15 mg SR Q8h **Days 5-7:** 15 mg SR Q12h **Days 8-11:** 15 mg SR QHS, then stop***

*Continue the taper based on patient response. Pauses in the taper may allow the patient time to acquire new skills for management of pain and emotional distress while allowing for neurobiological equilibration.

**Continue following this rate of taper until off the morphine or the desired dose of opioid is reached.

***May consider morphine IR 15 mg ½ tablet (7.5 mg) twice daily.

****Rapid tapers can cause withdrawal effects and patients should be treated with adjunctive medications to minimize these effects; may need to consider admitting the patient for inpatient care. If patients are prescribed both long-acting and short-acting opioids, the decision about which formulation to be tapered first should be individualized based on medical history, mental health diagnoses, and patient preference. Data shows that overdose risk is greater with long-acting preparations.

Consider use of adjuvant medications during the taper to reduce withdrawal symptoms:[6-9, 11-19]

Short-term oral medications can be utilized to assist with managing the withdrawal symptoms, especially during fast tapers.

Indication	Treatment Options
Autonomic symptoms (sweating, tachycardia, myoclonus)	**First line** • Clonidine 0.1 to 0.2 mg oral every 6 to 8 hours; hold dose if blood pressure <90/60 mmHg (0.1 to 0.2 mg 2 to 4 times daily is commonly used in the outpatient setting) – Recommend test dose (0.1 mg oral) with blood pressure check 1 hour post dose; obtain daily blood pressure checks; increasing dose requires additional blood pressure checks – Re-evaluate in 3 to 7 days; taper to stop; average duration 15 days **Alternatives** • Baclofen 5 mg 3 times daily may increase to 40 mg total daily dose – Re-evaluate in 3 to 7 days; average duration 15 days – May continue after acute withdrawal to help decrease cravings – Should be tapered when it is discontinued • Gabapentin start at 100 to 300 mg and titrate to 1800 to 2100 mg divided in 2 to 3 daily doses* – Can help reduce withdrawal symptoms and help with pain, anxiety, and sleep • Tizanidine 4 mg three times daily, can increase to 8 mg three times daily
Anxiety, dysphoria, lacrimation, rhinorrhea	• Hydroxyzine 25 to 50 mg three times a day as needed • Diphenhydramine 25 mg every 6 hours as needed**
Myalgias	• NSAIDs (e.g., naproxen 375 to 500 mg twice daily or ibuprofen 400 to 600 mg four times daily)*** • Acetaminophen 650 mg every 6 hours as needed • Topical medications like menthol/methylsalicylate cream, lidocaine cream/ointment
Sleep disturbance	• Trazodone 25 to 300 mg orally at bedtime
Nausea	• Prochlorperazine 5 to 10 mg every 4 hours as needed • Promethazine 25 mg orally or rectally every 6 hours as needed • Ondansetron 4 mg every 6 hours as needed
Abdominal cramping	• Dicyclomine 20 mg every 6 to 8 hours as needed
Diarrhea	• Loperamide 4 mg orally initially, then 2 mg with each loose stool, not to exceed 16 mg daily • Bismuth subsalicylate 524 mg every 0.5 to 1 hour orally, not to exceed 4192 mg/day

*adjust dose if renal impairment; ** avoid in patients > 65 years old; ***caution in patients with risk GI bleed, renal compromise, cardiac disease

References:

1. Dowell D, Haegerich TM, Chou R; CDC guideline for prescribing opioids for chronic pain – United States, 2016. MMWR 2016;65(1-49).
2. Atlas SJ, Deyo RA; Evaluating and managing acute low back pain in the primary care setting. J Gen Intern Med. 2001 Feb; 16(2): 120–131. doi: 0.1111/j.1525-1497.2001.91141.x
3. DSM-5 Criteria for Opioid Use Disorder: American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders Fifth Edition. 2013.
4. J. A. Boscarino, S. N. Hoffman, and J. J. Han, "Opioid-use disorder among patients on long-term opioid therapy: impact of final DSM-5 diagnostic criteria on prevalence and correlates.," Subst. Abuse Rehabil., vol. 6, pp. 83–91, Jan. 2015.
5. Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain — Part B: Recommendations for Practice, Version 5.5. April 30, 2010. [NOUGG] Accessed at: http://nationalpaincentre.mcmaster.ca/documents/opioid_guideline_part_b_v5_6.pdf
6. Berna C, Kulich RJ, Rathmell JP. Tapering Long-term Opioid Therapy in Chronic Noncancer Pain: Evidence and Recommendations for Everyday Practice. Mayo Clin Proc. 2015:90(6):828-842.
7. Kral, LA; Jackson K, Uritsky TJ. A practical guide to tapering opioids. Ment Health Clin (internet). 2015;5(3):102-108. DOI: 10.9740/mhc.2015.05.102.
8. Chou R, Fanciullo GJ, Fine PG, Adler JA, et al. Clinical guidelines for the use of chronic opioid therapy in chronic non-cancer pain. J Pain. 2009;10(2):113-30. DOI: 10.1016/j.jpain.2008.10.008.
9. Kahan M, Wilson L, Mailis-Gagnon A, Srivastava A, National Opioid Use Guideline G. Canadian guideline for safe and effective use of opioids for chronic non-cancer pain: clinical summary for family physicians. Part 2: special populations. Can Fam Physician. 2011;57(11):1269-76, e419-28.
10. American Society of Addiction Medicine (ASAM) National practice guideline for the use of medications in the treatment of addiction involving opioid use. 2015. Available from: http://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf?sfvrsn=24
11. Micromedex Drugdex Evaluations. Thomson Micromedex. Greenwood Village, C0. Available at: http://www.thomsonhc.com. Accessed March 19, 2012.
12. Charney DS, Sternberg DE, Kleber HD, et. al. The clinical use of clonidine in abrupt withdrawal from methadone. Effects on blood pressure and specific signs and symptoms. Arch Gen Psychiatry. 1981 Nov;38(11):1273-7.
13. Mattick RP, Hall W. Are detoxification programmes effective? Lancet. 1996 Jan 13;347(8994):97-100.
14. Boscarino JA, Hoffman SN, Han JJ. Opioid-use disorder among patients on long-term opioid therapy: impact of final DSM-5 diagnostic criteria on prevalence and correlates. Substance Abuse and Rehabilitation 2015:6 83–91
15. Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain Part B: Recommendations for Practice, Version 5.5 April 30, 2010. [NOUGG] Accessed at: http://nationalpaincentre.mcmaster.ca/documents/opioid_guideline_part_b_v5_6.pdf
16. Ahmadi-Abhari SA, Akhondzadeh S, Assadi SM, Shabestari OL, Farzanehan SM, Kamlipour A. Baclofen versus clonidine in the treatment of opiates withdrawal, side-effects aspect: a double-blind randomized controlled trial. Journal of Clinical Pharmacy and Therapeutics 2001;26:67-71
17. Akhondzadeh S, Ahmadi-Abhari SA, Assadi SM, Shabestari OL, Kashani AR, Farzanehgan SM. Double-blind randomized controlled trial of baclofen in the treatment of opiates wit Journal of Clinical Pharmacy and Therapeutics 2000; 25:347-353.
18. Assadi SM, Radgoodarzi R, Ahmadi-Abhari SA. BMC Psychi atry. Baclofen for maintenance treatment of opioid dependence: A randomized double-blind placebo-controlled clinical trial. 2003;3:16-26.
19. de Beaurepaire, R. Suppression of alcohol dependence using baclofen: a 2 year observational study of 100 patients. Frontiers in Psychiatry. 2012;103: 1-7.

VA Academic Detailing Service

Real Provider Resources
Real Patient Results

U.S. Department of Veterans Affairs

This reference guide was created to be used as a tool for VA providers and is available to use from the Academic Detailing SharePoint.

These are general recommendations only; specific clinical decisions should be made by the treating provider based on an individual patient's clinical condition.

VA PBM Academic Detailing Service Email Group:
PharmacyAcademicDetailingProgram@va.gov

VA PBM Academic Detailing Service SharePoint Site:
https://vaww.portal2.va.gov/sites/ad/SitePages/Home.aspx

VA PBM Academic Detailing Public Website:
http://www.pbm.va.gov/PBM/academicdetailingservicehome.asp

October 2016

IB 10-939 P96820

How to Dispose of Unused Medicines

Is your medicine cabinet filled with expired drugs or medications you no longer use? How should you dispose of them?

Most drugs can be thrown in the household trash, but consumers should take certain precautions before tossing them out, according to the Food and Drug Administration (FDA). A few drugs should be flushed down the toilet. And a growing number of community-based "take-back" programs offer another safe disposal alternative.

Guidelines for Drug Disposal

FDA worked with the White House Office of National Drug Control Policy (ONDCP) to develop the first consumer guidance for proper disposal of prescription drugs. Issued by ONDCP in February 2007 and updated in October 2009, the federal guidelines are summarized here:

- Follow any specific disposal instructions on the drug label or patient information that accompanies the medication. Do not flush prescription drugs down the toilet unless this information specifically instructs you to do so.
- Take advantage of community drug take-back programs that allow the public to bring unused drugs to a central location for proper disposal. Call your city or county government's household trash and recycling service (see blue pages in phone book) to see if a take-back program is available in your community. The Drug Enforcement Administration, working with state and local law enforcement agencies, is sponsoring National Prescription Drug Take Back Days (*www.deadiversion.usdoj.gov*) throughout the United States.
- If no instructions are given on the drug label and no

Take drugs out of their original containers and mix them with an undesirable substance, such as used coffee grounds …

take-back program is available in your area, throw the drugs in the household trash, but first:
  - Take them out of their original containers and mix them with an undesirable substance, such as used coffee grounds or kitty litter. The medication will be less appealing to children and pets, and unrecognizable to people who may intentionally go through your trash.
  - Put them in a sealable bag, empty can, or other container to prevent the medication from leaking or breaking out of a garbage bag.

FDA's Deputy Director of the Office of Compliance Ilisa Bernstein, Pharm.D., J.D., offers some additional tips:

- Before throwing out a medicine container, scratch out all identifying information on the prescription label to make it unreadable. This will help protect your identity and the privacy of your personal health information.
- Do not give medications to friends. Doctors prescribe drugs based on a person's specific symptoms and medical history. A drug that works for you could be dangerous for someone else.
- When in doubt about proper disposal, talk to your pharmacist.

Bernstein says the same disposal methods for prescription drugs could apply to over-the-counter drugs as well.

Why the Precautions?

Disposal instructions on the label are part of FDA's "risk mitigation" strategy, says Capt. Jim Hunter, R.Ph., M.P.H., senior program manager on FDA's Controlled Substance Staff. When a drug contains instructions to flush it down the toilet, he says, it's because FDA, working with the manufacturer, has determined this method to be the most appropriate route of disposal that presents the least risk to safety.

Drugs such as powerful narcotic pain relievers and other controlled substances carry instructions for flushing to reduce the danger of unintentional use or overdose and illegal abuse.

For example, the fentanyl patch, an adhesive patch that delivers a potent pain medicine through the skin, comes with instructions to flush used or leftover patches. Too much fentanyl can cause severe breathing problems and lead to death in babies, children, pets, and even adults, especially those who have not been prescribed the drug. "Even after a patch is used, a lot of the drug remains in the patch," says Hunter, "so you wouldn't want to throw something in the trash that contains a powerful and potentially dangerous narcotic that could harm others."

Environmental Concerns

Despite the safety reasons for flushing drugs, some people are questioning the practice because of concerns about trace levels of drug residues found in surface water, such as rivers and lakes, and in some community drinking water supplies. However, the main way drug residues enter water systems is by people taking medications and then naturally passing them through their bodies, says Raanan Bloom, Ph.D., an environmental assessment expert in FDA's Center for Drug Evaluation and Research. "Most drugs are not completely absorbed or metabolized by the body, and enter the environment after passing through waste water treatment plants."

A company that wants FDA to approve its drug must submit an application package to the agency. FDA requires, as part of the application package, an assessment of how the drug's use would affect the environment. Some drug applications are excluded from the assessment requirement, says Bloom, based on previous agency actions.

"For those drugs for which environmental assessments have been required, there has been no indication of environmental effects due to flushing," says Bloom. In addition, according to the Environmental Protection Agency, scientists to date have found no evidence of adverse human health effects from pharmaceutical residues in the environment.

Nonetheless, FDA does not want to add drug residues into water systems unnecessarily, says Hunter. The agency reviewed its drug labels to identify products with disposal directions recommending flushing or disposal down the sink. This continuously revised listing can be found at FDA's Web page on Disposal of Unused Medicines (*www.fda.gov/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/EnsuringSafeUseofMedicine/SafeDisposalofMedicines/ucm186187.htm*).

Another environmental concern lies with inhalers used by people who have asthma or other breathing problems, such as chronic obstructive pulmonary disease. Traditionally, many inhalers have contained chlorofluorocarbons (CFC's), a propellant that damages the protective ozone layer. The CFC inhalers are being phased out and replaced with more environmentally friendly inhalers.

Depending on the type of product and where you live, inhalers and aerosol products may be thrown into household trash or recyclables, or may be considered hazardous waste and require special handling. Read the handling instructions on the label, as some inhalers should not be punctured or thrown into a fire or incinerator. To ensure safe disposal, contact your local trash and recycling facility. FDA

Find this and other Consumer Updates at *www.fda.gov/ForConsumers/ConsumerUpdates*

Sign up for free e-mail subscriptions at *www.fda.gov/consumer/consumerenews.html*

DISPOSAL ACT: GENERAL PUBLIC FACT SHEET

On September 8, 2014, the Drug Enforcement Administration (DEA) made available for public view a final rule regarding the disposal of pharmaceutical controlled substances in accordance with the Controlled Substance Act, as amended by the Secure and Responsible Drug Disposal Act of 2010 ("Disposal Act"). The final rule is available for public view at http://www.federalregister.gov/public-inspection. The final rule will officially publish in the *Federal Register* on September 9, 2014, and will be available on http://www.regulations.gov, and our website, http://www.DEAdiversion.usdoj.gov. This General Public Fact Sheet contains a general summary of some of the effects of the new rule on the general public. For detailed information, please visit our website or contact your local DEA office.

1. What is the Disposal Act?

- The Disposal Act amended the Controlled Substances Act (CSA) to give the DEA authority to promulgate new regulations, within the framework of the CSA, that will allow ultimate users to deliver unused pharmaceutical controlled substances to appropriate entities for disposal in a safe and effective manner consistent with effective controls against diversion. The goal of the Disposal Act is to encourage public and private entities to develop a variety of methods of collection and disposal in a secure, convenient, and responsible manner.

2. Who is an "ultimate user"?

- The CSA defines an "ultimate user" as "a person who has lawfully obtained, and who possesses, a controlled substance for his own use or for the use of a member of his household or for an animal owned by him or a member of his household."

3. Are my options for disposing of pharmaceuticals more limited now?

- No. These regulations don't limit the ways that ultimate users may dispose of pharmaceutical controlled substances—they expand them. The DEA's new regulations outline the methods by which pharmaceutical controlled substances may be transferred to authorized collectors for disposal. Ultimate users now have expanded options to safely and responsibly dispose of their unused and unwanted, lawfully-possessed pharmaceutical controlled substances: through collection receptacles, mail-back packages, and take-back events.

4. May I continue to dispose of pharmaceutical controlled substances using methods that were valid prior to this final rule?

- Yes. Any method of pharmaceutical disposal that was valid prior to these regulations continues to be valid.

- For example, ultimate users may continue to utilize the FDA and EPA guidelines for the disposal of medicines, available through the DEA website at http://www.deadiversion.usdoj.gov/drug_disposal/index.html.

5. **Will there still be take-back events every six months?**

   - Law enforcement may continue to conduct take-back events at any time. Any person or community group, registrant or non-registrant, may partner with law enforcement to conduct take-back events. The DEA encourages communities to partner with law enforcement to continue to conduct take-back events.

   - The next DEA-sponsored nationwide take back event will be on September 27, 2014. The DEA will not continue to sponsor nationwide take-back events in order to prevent competing with local take-back efforts conducted in accordance with the new regulations.

6. **Can I dispose of a friend or family member's pharmaceutical controlled substances for them?**

   - You may dispose of a member of your household's unused or unwanted pharmaceutical controlled substances. But, if they are *not* a member of your household, you may not dispose of their pharmaceutical controlled substances on their behalf. Only ultimate users may dispose of pharmaceutical controlled substances. An ultimate user, which includes a household member of the person or pet who was prescribed the medication, may transfer pharmaceutical controlled substances to authorized collectors or law enforcement via a collection receptacle, mail-back package, or take-back event.

   - Exceptions:

     - If someone dies while in lawful possession of pharmaceutical controlled substances, any person lawfully entitled to dispose of the decedent's property may dispose of the pharmaceutical controlled substances; and

     - A long-term-care facility may dispose of a current or former resident's pharmaceutical controlled substances.

7. **My mother has pharmaceutical controlled substances delivered to her home. She passed away, and I would like to dispose of her unused pharmaceutical controlled substances. I did not live with her. Can I dispose of them?**

   - Yes, so long as you are lawfully entitled to dispose of her property, you may dispose of her unused pharmaceutical controlled substances.

8. **How can I find a collection receptacle location near me?**

   - Members of the public may call the DEA's Registration Call Center at 1-800-882-9539 to find a collection receptacle location near them.

9. **I live in a rural location. There are no collection receptacles, mail-back programs, or take-back events in the vicinity. How can I safely and securely dispose of my unwanted pharmaceutical controlled substances?**

   - There are no restrictions on using a mail-back package obtained from another state. You may dispose of your unwanted pharmaceutical controlled substances in a mail-back package that you received from another state, even if the mail-back package is delivered to a location outside of your state.

- Additionally, these regulations expand—not limit—the options that ultimate users have to dispose of unwanted pharmaceutical controlled substances. You may continue to dispose of your unwanted pharmaceutical controlled substances using the lawful methods you used prior to the effective date of the new regulations, as long as those methods are consistent with Federal, State, tribal, or local laws and regulations, including surrendering pharmaceutical controlled substances to law enforcement.

10. Can I dispose of illicit drugs through a collection receptacle, mail-back package, or take-back event? How can I safely and securely dispose of my unwanted marijuana?

- No. Persons may not dispose of illicit drugs (*e.g.*, schedule I controlled substances such as marijuana, heroin, LSD) through any of the three disposal methods.

- Persons may not dispose of any controlled substances that they do not legally possess. This includes schedules II-V controlled substances that are illegally obtained and possessed.

11. I don't have a mail-back package, but I remember the address from the last mail-back package I used. Can I mail pharmaceutical controlled substances to that address without an official mail-back package?

- No. Persons must use the mail-back package that was provided by an authorized collector or one of their partners. The mail-back package must meet certain specifications, to include having a unique identification number. If an authorized collector receives a sealed mail-back package that they did not provide, the collector must reject it, or if they inadvertently accept it, they must notify the DEA.

- If persons would like to use a mail-back package and don't possess one, they may contact an authorized collector to obtain one.

12. Can I dispose of my insulin syringes through one of the disposal methods? What about my child's asthma inhaler?

- No. Persons may not dispose of any dangerous, hazardous, or non-compliant items in a collection receptacle or a mail-back package. This includes medical sharps and needles (*e.g.*, insulin syringes), and compressed cylinders or aerosols (*e.g.*, asthma inhalers).

- Other non-compliant items that may not be placed into a collection receptacle or mail-back package include iodine-containing medications and mercury-containing thermometers.

- Accepting these materials places the collector at risk, and might cause a dangerous situation. You should continue to use any valid methods you currently utilize to dispose of those medications and medical implements.

- Carefully review the authorized collector's instructions for what is and is not acceptable to place into the collection receptacle or mail-back package. If you have any questions, you should ask an employee of the authorized collector.

13. Can my pharmacy or other collector force me to give personal information, like my name, my prescription information, or my physician information?

- No. A collector may not force anyone to provide any personal information about themselves, their prescription, or their physician.

- In order to protect personally identifiable information, the DEA encourages persons not to place prescription bottles in collection receptacles or mail-back packages.

14. What happens to my pharmaceuticals after I dispose of them? Can they be sold, given away, re-packaged, or re-dispensed for use by another patient? Can they be otherwise recycled?

- Pharmaceutical controlled substances transferred from ultimate users to authorized collectors via either collection receptacles or mail-back programs shall be securely stored or transferred until rendered non-retrievable. They may not be re-sold, donated, repackaged, or re-dispensed. Currently, the most common method of rendering pharmaceutical controlled substances non-retrievable is incineration.

15. Are there environmental impacts?

- Disposed pharmaceuticals must be rendered non-retrievable in compliance with all applicable Federal, State, tribal, and local laws, including those relating to environmental protection. By expanding options on how ultimate users may dispose of their pharmaceutical controlled substances, fewer of these substances may end up in our nation's water system.

Pain Medicine 2016; 17: 52–63
doi: 10.1111/pme.12878

OXFORD

EDUCATION & TRAINING SECTION

Original Research Article

SCOPE of Pain: An Evaluation of an Opioid Risk Evaluation and Mitigation Strategy Continuing Education Program

Daniel P. Alford, MD, MPH,*,† Lara Zisblatt, EdD, MA,* Pamela Ng, MSc,‡ Sean M. Hayes, PsyD,‡ Sophie Peloquin, MMedSc,‡ Ilana Hardesty, BA,* and Julie L. White, MS*

*The Barry M. Manuel Office of Continuing Medical Education, Boston University School of Medicine, Boston, Massachusetts, USA; †Department of Medicine, Boston Medical Center, Boston, Massachusetts, USA; ‡Performance Improvement Division, AXDEV Group Inc., Brossard, Quebec, Canada

Correspondence to: Daniel P. Alford, MD, MPH, FACP, FASAM, Boston Medical Center, 801 Massachusetts Avenue, Crosstown 2, Boston, MA 02118, USA. Tel: 617-414-3747; Fax: 617-414-4676; E-mail: dan.alford@bmc.org.

Funding sources: The *SCOPE of Pain* program was funded by an independent educational grant awarded by the manufacturers of extended-release (ER) and long-acting (LA) opioid analgesics, collectively known as the Risk Evaluation and Mitigation Strategy (REMS) Program Companies or RPC (http://www.er-la-opioidrems.com/lwgUI/rems/home.action).

Disclosure: The authors do not have any relationships to disclose.

Abstract

Objective. Due to the high prevalence of prescription opioid misuse, the US Food and Drug Administration (FDA) mandated a Risk Evaluation and Mitigation Strategy (REMS) requiring manufacturers of extended-release/long-acting (ER/LA) opioid analgesics to fund continuing education based on a *FDA Blueprint*. This article describes the Safe and Competent Opioid Prescribing Education (*SCOPE of Pain*) program, an ER/LA opioid analgesic REMS program, and its impact on clinician knowledge, confidence, attitudes, and self-reported clinical practice.

Method. Participants of the 3-h *SCOPE of Pain* training completed pre-, immediate post- and 2-month post-assessments.

Subjects. The primary target group (n = 2,850), and a subset (n = 476) who completed a 2-month post-assessment, consisted of clinicians licensed to prescribe ER/LA opioid analgesics, who care for patients with chronic pain and who completed the 3-h training between February 28, 2013 and June 13, 2014.

Results. Immediately post-program, there was a significant increase in correct responses to knowledge questions (60% to 84%, $P \leq 0.02$) and 87% of participants planned to make practice changes. At 2-months post-program, there continued to be a significant increase in correct responses to knowledge questions (60% to 69%, $P \leq 0.03$) and 67% reported increased confidence in applying safe opioid prescribing care and 86% reported implementing practice changes. There was also an improvement in alignment of desired attitudes toward safe opioid prescribing.

Conclusions. The *SCOPE of Pain* program improved knowledge, attitudes, confidence, and self-reported clinical practice in safe opioid prescribing. This national REMS program holds potential to improve the safe use of opioids for the treatment of chronic pain.

Key Words. Chronic Pain; Opioid Medications Continuing Education

Introduction

Chronic pain affects approximately 100 million in the United States, making it one of the most common reasons patients seek medical care [1,2]. Undertreated chronic pain causes reduced function and quality of life [3], and is associated with increased rates of suicidality [4,5]. However, more aggressive chronic pain management with opioid analgesics over the past two decades has been associated with an increase in prescription

opioid misuse including addiction, diversion, and overdose deaths [6–11]. Determinants for increased opioid-related mortality have been described including high-volume and high-dose prescribing [12]. Despite concerns over misuse, opioid analgesics remain an important treatment for some patients' chronic severe pain [1,13–15]. According to the Institute of Medicine report, "regulatory, legal, educational, and cultural barriers inhibit the medically appropriate use of opioid analgesics [1]." Numerous safe opioid prescribing guidelines have been published [16–21], however, recent reports show that adherence with these guidelines is low [22–24].

Clinicians struggle to balance the benefits and harms associated with opioid prescribing [4,25]. While pain management education remains inadequate [26–30], it is a key strategy to address the prescription opioid misuse problem [31]. In July 2012, the US Food and Drug Administration (FDA) approved a single shared Risk Evaluation and Mitigation Strategy (REMS) required of manufacturers of extended-release/long-acting (ER/LA) opioid analgesics to promote safe use of these medications [32]. While most FDA-mandated REMS programs include medication guides and communication plans and are associated with a single medication, this REMS requires all manufacturers to jointly fund accredited continuing education for the approximately 320,000 ER/LA opioid prescribers in the United States [33]. The FDA created the *Blueprint for Prescriber Education for Extended-Release and Long-Acting Opioid Analgesics* ("FDA Blueprint") to define the content that must be included in REMS educational programs [34,35]. Boston University School of Medicine (BUSM), the first Continuing Medical Education provider to receive ER/LA opioid REMS funding, launched its Safe and Competent Opioid Prescribing Education (*SCOPE of Pain*) program on February 28, 2013.

As a new national strategy, the effectiveness of requiring manufacturers to contribute funds to support independent education based on an FDA Blueprint is unknown. The purpose of this study is to describe the *SCOPE of Pain* program and report on its impact on participants' knowledge, attitudes, confidence, and self-reported practice. As the first report on an ER/LA opioid REMS program, the data from this project can offer an initial assessment of effectiveness of this national strategy to improve practices.

Methods

SCOPE of Pain Description

SCOPE of Pain is based on the FDA Blueprint [36] and is offered as a 3-h live or online activity available at www.scopeofpain.org. The live programs included 20 half-day standalone meetings across the United States in 16 different states. The live and online curricula are identical and presented using a clinical case involving three separate visits: *initial visit*—assessing chronic pain and opioid misuse risk; *one week later*—initiating (continuing) opioid therapy safely and *months later*—assessing and managing aberrant medication taking behaviors. This allows participants to apply the ER/LA opioid REMS content to a common clinical scenario. *SCOPE of Pain* was created based on an existing online and live education program we developed in 2010 called "*Safe and Effective Opioid Prescribing for Chronic Pain*" (www.opioidprescribing.org) that had trained approximately 19,000 clinicians. A team of 13 faculty with expertise in pain management, addiction, primary care, and medical education created the original *Opioid Prescribing* program and a team of five experts tailored that content to cover all aspects of the FDA Blueprint to make the program REMS compliant. While the original content was well aligned with the FDA Blueprint, specific topics were expanded including opioid prescribing using a risk/benefit framework, effective communication skills for assessing and managing aberrant medication taking behaviors and strategies for team-based care. While the content was not formally tested, evaluation data from the over 5,000 participants of the original *Opioid Prescribing* program were used to inform the creation of the *SCOPE of Pain* program.

To ensure that the curriculum covered all FDA Blueprint elements, BUSM conducted both internal and external audit processes and an additional independent audit was conducted by the Accreditation Council for Continuing Medical Education (ACCME). The Boston University Medical Campus Institutional Review Board (IRB) determined this evaluation to be exempt from further IRB review.

Outcomes

A repeated measures design was used to assess the impact of *SCOPE of Pain* in changing clinicians' knowledge, attitudes, confidence, and clinical practice. Data were collected from participants at three time points: 1) pre-program (PRE), 2) immediate post-program (IMMED), and 3) 2-months post-program (2MO) (Figure 1). This design assessed changes over time with specific attention to increased alignment with practices described in the FDA Blueprint.

Items to assess participants' changes were designed by a multidisciplinary team including: a faculty expert in opioid prescribing, primary care and addiction medicine (DPA), experts in educational design (LZ, JLW, IH) and experts in outcomes assessments (SMH, SP, PN). Items were developed with the four key metrics of change that *SCOPE of Pain* targets: 1) twenty (20) items to assess improvements in *knowledge* (of which only 10 were repeated at 2MO to minimize respondents' burden and allow for additional questions about changes in performance), 2) six (6) items regarding change in

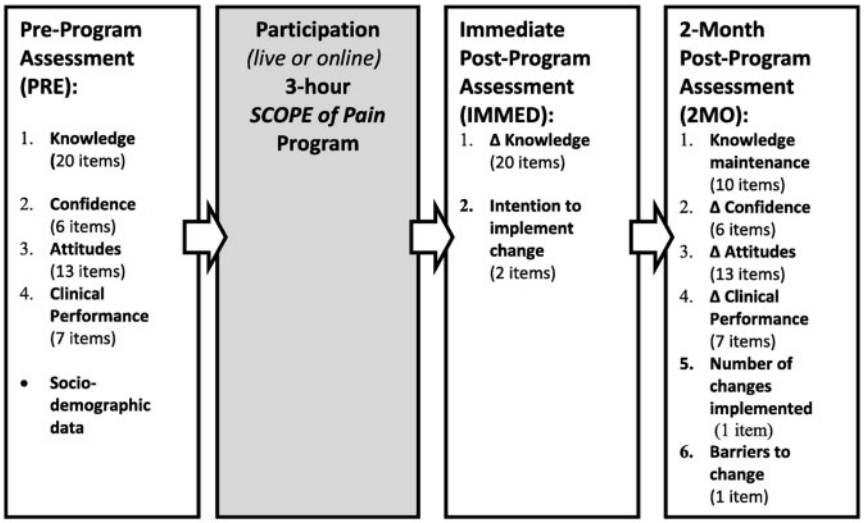


Figure 1 Evaluation of SCOPE of Pain: Data collection points and associated outcome metrics.

participant *confidence* to manage patients with chronic pain, 3) thirteen (13) items assessing change in *attitudes* (*motivation and willingness)* when treating patients with chronic pain and using guideline-based care; and 4) multiple items addressing changes in *clinical practice* including: a) two (2) items assessing intention to change clinical practice; b) seven (7) items assessing participants' reported changes in clinical performance; c) one (1) item assessing number of changes implemented; and d) one (1) item assessing barriers to implementing change in practice.

To be REMS compliant, the assessment was required to have knowledge-based questions from each of the six sections of the FDA Blueprint [36]. The course director (DPA) who specializes in primary care, pain management and addiction medicine and program education experts (LZ, IH, JLW) determined which elements from each section were best suited for knowledge-based questions and most relevant to practicing clinicians. Confidence and performance questions were based on guideline-based [17–21] safe opioid prescribing practices (e.g., risk and benefit assessments, monitoring and management strategies) and important communication skills. Each item was tested and retested for face validity, and linked explicitly to elements within the six sections of the FDA Blueprint for content validity. All questions were tested by primary care clinicians from general internal medicine and family medicine and pain and addiction medicine experts. The questionnaires used did not undergo validity testing as the evaluation was designed for a new educational program without a known gold standard or preexisting criterion by which to validate.

The PRE/IMMED/2MO items are quantitative using forced choice (drop-down) options. Knowledge-testing questions were a combination of multiple nominal choice responses (including dichotomous true/false questions and item-matching questions). Likert-type response formats were used for self-reported assessment of confidence, attitudes, and clinical practice.

Participant Recruitment

The primary target group included clinicians who manage patients with chronic pain longitudinally. This included primary care and other specialties that manage chronic pain such as hematology, oncology, rheumatology, rehabilitation medicine, sports medicine, neurology, orthopedics, and anesthesiology. While promotion for the program and collection of pre-assessment (PRE) and post-assessment (IMMED and 2MO) data extended beyond the primary target group, only participants whose specialty indicated a likelihood for managing chronic pain were included in this study.

All participants completed the pre-assessment on registration. Participants were required to complete the immediate post-assessment to receive continuing education credit. A drawing for an e-book reader was used to incentivize completion of the 2-month post-assessment. As an email address was collected for all participants, an email was automatically sent to all participants at 60 days, with a reminder at 63 days, and 66 days post-activity for those who did not complete the assessment.

Analyses

Using IBM SPSS 22.0 software (IBM Corporation, Armonk, NY), frequencies and cross-tabulations were calculated for each item. Paired *t*-tests were used to identify participant knowledge change (PRE vs IMMED) and knowledge maintenance (PRE vs 2MO). Paired *t*-tests were also used to compare participants' attitudes and clinical practice (PRE vs 2MO) to establish change in clinical practice two months after participation.

Table 1 *SCOPE of Pain* participant characteristics

	Primary Target Group (n = 2,850)	Completed 2-Month Post-Program Assessment (n = 476)
Profession n, (%)		
Physician	1,955 (69%)	288 (61%)
Advance practice nurse*	706 (25%)	154 (32%)
Physician assistant	189 (6%)	34 (7%)
Specialty n, (%)		
Family practice	1,179 (41%)	235 (49%)
Internal medicine	791 (28%)	117 (25%)
Anesthesiology	183 (6%)	26 (6%)
Pediatrics	159 (6%)	19 (4%)
Orthopedic surgery	105 (4%)	14 (3%)
Physical medicine and rehabilitation	115 (4%)	17 (4%)
Hematology and oncology	85 (3%)	12 (2%)
Obstetrics and gynecology	83 (3%)	12 (2%)
Neurology	63 (2%)	11 (2%)
Rheumatology	52 (2%)	5 (1%)
Infectious disease	25 (1%)	6 (1%)
Sports medicine	7 (0.2%)	1 (0.2%)
Adolescent medicine	3 (0.1%)	1 (0.2%)
Years of practice n, (%)		
1–5 years	659 (23%)	118 (25%)
6–10 years	405 (14%)	74 (16%)
11–20 years	783 (27%)	116 (24)
>21 years	950 (33%)	160 (34)
Other	21 (2%)	8 (1%)
Participant type n, (%)		
Online	2,203 (77%)	315 (66%)
Live	647 (23%)	161 (34%)

*Significant difference between the group that completed the *SCOPE of Pain program* and those that completed the 2-MO post-assessment at the $P = 0.05$ level.

Results

Participants

A total of 10,566 participants completed *SCOPE of Pain* between February 28, 2013 and June 13, 2014. Twenty-seven percent (2,850/10,566) were considered our primary target group (defined as being physicians, advanced practice nurses, or physician assistants licensed to prescribe opioid analgesics and a member of 13 specialties that routine manage patients with chronic pain (Table 1). The primary target group was made up of mostly physicians (69%), primary care specialties (75%), and clinicians practicing for greater than 10 years (60%). A majority of participants (77%) completed the training online rather than live. All 2,850 participants completed the PRE and IMMED assessments. Of those, 17% (476/2,850) completed the 2MO assessment. Table 1 presents the socio-demographics for the primary target group who completed *SCOPE of Pain* compared with the subset who also completed the 2MO assessment. The two groups were similar, except for a higher proportion of advanced practice nurses completing the 2MO assessment ($P < 0.001$).

The following section focuses on the findings divided into two sections 1) IMMED and 2) 2MO assessment. Findings are grouped by the type of expected impact of *SCOPE of Pain* on participants (knowledge, confidence, attitudes, and clinical practice).

IMMED: Immediate Post-Program Assessment (N = 2,850)

Knowledge. A significantly higher proportion of participants responded correctly to the 20 knowledge items in the IMMED compared with PRE, 84% vs 60% ($P \leq 0.02$), respectively.

Intention to Change. Immediate post-program, 87% of participants stated they were planning to make at least one change to align their practice with guideline-based

Table 2 Changes in confidence in performing guideline-based clinical practices

Statements	2-Months Post-Program Assessment (n = 476)		
	Rate your confidence in your ability to accomplish each of the following as you attended the program:		
	Increased	Remained the same	Decreased
Assess pain in a new patient?	65% (311)	32% (153)	3% (12)
Assess the potential benefit and risk of opioids for chronic pain in a new patient?	72% (341)	26% (126)	2% (9)
Communicate and collaborate with patients around opioid initiation?	71% (338)	28% (132)	1% (6)
Monitor patients on chronic opioid therapy for opioid misuse, including addiction and diversion?	63% (301)	34% (164)	2% (11)
Effectively and efficiently assess your patients for potential misuse of opioids?	67% (318)	32% (151)	1% (7)
Effectively communicate with your patients when treatment has shown no benefit	63% (300)	34% (160)	3% (16)

care. The most frequently stated changes were 1) to improve opioid prescribing documentation (56%); 2) to implement or improve opioid prescribing patient education or communication (53%); and 3) to institute or improve Patient-Prescriber Agreements (47%).

2MO: 2-Months Post-Program Assessment (N = 476)

Knowledge Maintenance. Compared with the PRE, the proportion of correct responses at 2MO was significantly ($P \leq 0.03$) higher for 7 out of the 10 knowledge questions on opioid misuse risk factors and risk assessment. While the improvement in correct responses in the 2MO (69%) compared with PRE (60%) was modest, it was significant.

Confidence. Approximately two-thirds of participants reported increased confidence in guideline-based opioid prescribing practices including assessing pain and opioid misuse risk and assessing, monitoring and discussing opioid benefits, risks, and harms with their patients (Table 2).

Attitudes. Participants reported on average an increase of 9% in alignment with increased trust in their patients and with guideline-based care ($P \leq 0.01$). For example, to the statement *I trust that available pain scales provide reliable assessment of pain in my patients*, 48% of participants responded 4 or 5 on the agreement scale (1 is completely disagree and 5 is completely agree) at 2MO, as compared with 31% at PRE, a 17% increase ($P < 0.01$). For the items for which a decrease in agreement was desired, the proportion of participants who reported being in agreement decreased on average by 7% ($P \leq 0.02$) (Table 3).

Clinical Practice (Patient Communication and Guideline-Based Care)

Patient Communication (Table 4)

Improvements were made in all seven recommended communication skills with a significant increase from PRE to 2MO in participants reporting performing these behaviors with most/all of their patients with chronic pain from an average of 64% to 78% ($P < 0.01$), respectively.

Guideline-Based Care (Table 5)

When presented with nine specific clinical practice changes at 2MO: 68% had either partially or fully improved their opioid prescribing documentation in patient medical records, 67% reported having implemented or improved patient education and communication relating to opioid prescribing and 52% reported having implemented/improved urine drug testing for monitoring opioid adherence and misuse. Approximately 60% reported partially/fully implementing four or more changes in their practice with 35% implementing 7–9 changes.

Barriers to Change

Eighty-three percent of participants reported at least one barrier to making practice change. The most significant barriers reported were patients' resistance to change (23%) followed by other providers' or institutional resistance to change (17%).

Table 3 Changes in attitude in managing patients with chronic pain (n = 476)

Statement	Desired Change	Percent (n) Reported ≥ 4 on the Agreement Scale Scale: 1-Strongly Disagree to 5-Completely Agree			
		Pre-Program	2-Month Post-Program	% Change	*P* value
Statements that should have MORE agreement					
I trust that most of my patients with chronic pain are able to provide an accurate self-assessment of their pain	↑	48% (227)	50% (239)	+2%	0.314
I trust that available pain scales provide reliable assessment of pain in my patients	↑	31% (149)	48% (230)	+17%	<0.001
It is my responsibility and role to discuss with my patients not to give away their medications to relatives or friends	↑	92% (437)	96% (459)	+4%	0.001
I am comfortable responding to family calls about my patients' possible misuse of opioids	↑	50% (237)	62% (296)	+12%	<0.001
Statements that should have LESS agreement					
There is no reliable way to identify those of my patients who are drug-seekers	↓	29% (138)	21% (102)	−8%	0.020
Treating and managing patients with chronic pain is time-consuming and frustrating	↓	68% (326)	64% (304)	−4%	0.054
I will never prescribe ER/LA opioids to a patient with history of mental health issues	↓	16% (77)	17% (82)	+1%	0.564
I cannot get my patients to be truthful about illicit drug use	↓	29% (137)	22% (107)	−7%	0.004
I am uncomfortable communicating an unexpected urine drug test result to my patients	↓	24% (112)	20% (97)	−4%	0.187
I am unsure I am effectively assessing opioids misuse risk in my patients with chronic pain on ER/LA opioids	↓	48% (226)	31% (147)	−4%	<0.001
I suspect there is more I should be doing in the treatment and management of my patients who report chronic pain	↓	76% (360)	58% (275)	−18%	<0.001
I prefer to stop seeing/following a patient who has misused his/her opioid prescription	↓	57% (273)	51% (242)	−8%	0.007
I would only ask for a urine drug test from a patient that I thought was abusing the opioid prescription	↓	19% (90)	13% (63)	−6%	0.003

Discussion

SCOPE of Pain, an ER/LA opioid REMS program, resulted in improvements in knowledge and attitudes about safe opioid prescribing, as well as increases in self-reported confidence and implementation of improved communication skills and guideline-based opioid prescribing practices. There were increases in clinician trust in patients with chronic pain and in the tools available to assess patients' pain and to detect opioid misuse.

For the first time, an FDA REMS included the mandate for independent continuing education to be funded by commercial entities to help mitigate the risks of their medications. While education is a natural part of any REMS, whether you must teach about a mandated registry or how to document safe-use conditions (e.g., pregnancy tests), this REMS included an extensive, prescribed curriculum developed by the FDA and not the providers of the education. This is distinct from the usual process of how content for continuing education is created by the provider.

While the need for prescriber education is universally accepted, this REMS has been met with some skepticism [37]. This study is a first step in evaluating this national strategy of clinician continuing education as a way to improve safe opioid prescribing. The comparison among PRE, IMMED, and 2MO assessment data suggest that not only did clinicians learn more about safe opioid prescribing, but they have more confidence and

Table 4 Changes in patient communication (n = 476)

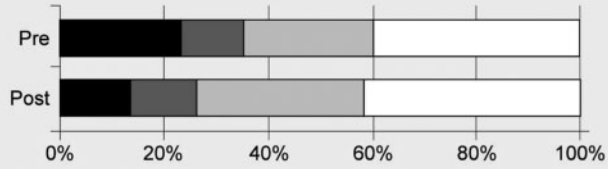
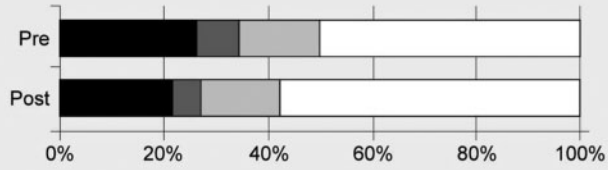
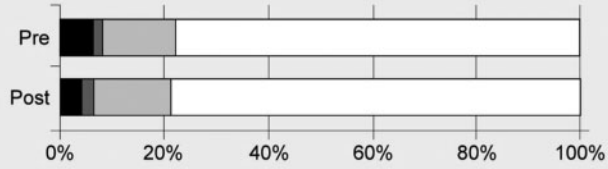
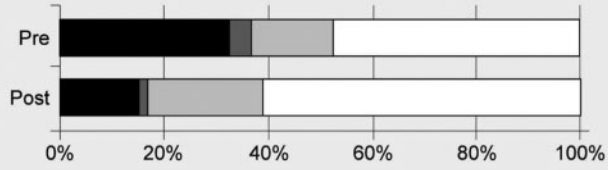
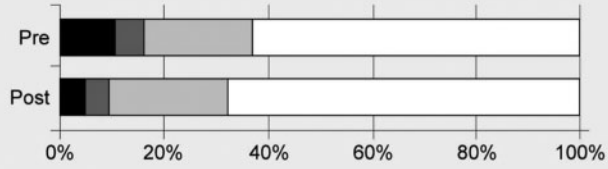
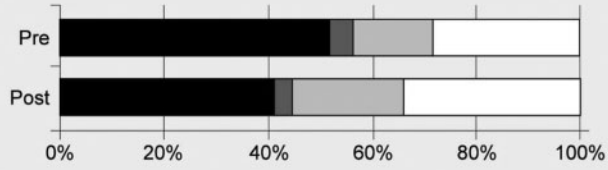
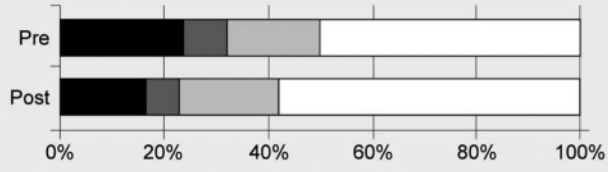
Clinical Performance Item	I am not currently performing this behavior in my practice / With my high risk pain patients only / With most of my pain patients / With all my pain patients
1 Talk with my patients' previous primary care providers and review prior medical records	
2 Implement and co-sign a Patient-Prescriber agreement (including informed consent and plan of care)	
3 Inform my patients about taking medication exactly as prescribed (e.g., don't increase dose; don't crush tablets, etc.))	
4 Educate my patient about proper storage and disposal of ER/LA Opioids	
5 Counsel my patients about risk of respiratory depression and overdose.	
6 Give my patients a patient counselling document and tools as part of the discussions with them when prescribing opioid analgesics	
7 Explain to my patient the methods I use to monitor opioid misuse (i.e., urine drug tests and/or pill counts)	

Table 5 Changes in guideline-based practices (n = 476)

	2-Months Post-Program Assessment		
	Have you made any changes in your practice, system care, and/or patient care as you participated the program entitled Scope of Pain: Safe and Competent Opioid Prescribing Education?		
Changes to Practice	% (n) who partially/fully implemented	% (n) who implemented before participating in this activity	% (n) who are planning on implementing in next 6–12 months or not planning to implement
Implement or improve ...			
Patient Prescriber "Agreements"	47% (225)	26% (143)	27% (128)
Informed consent procedures	45% (216)	18% (84)	37% (176)
Urine drug testing for monitoring	52% (246)	19% (92)	29% (138)
Pill counts for monitoring	43% (204)	10% (49)	47% (223)
Patient education or communication strategies	67% (319)	13% (63)	20% (94)
Office-wide policies/ procedures	49% (233)	18% (86)	33% (157)
Multidisciplinary team approach	48% (227)	14% (65)	39% (184)
Documentation in patient medical records	68% (325)	17% (80)	15% (71)
Register/begin using the Prescription Drug Monitoring Program	45% (214)	26% (124)	23% (108)

were able to make changes to align with guideline-based practices. While knowledge gain did decrease in the 2MO, it did not return to baseline, and in fact continued to be significantly higher than the PRE-assessment. Without repeated exposure deterioration of knowledge is an expected outcome in education studies.

While the evaluation of this REMS education is based on self-reported data and does not include objective measures (e.g., decreases in prescription opioid misuse) to demonstrate the effectiveness of the training, it does demonstrate that education based on content from the FDA, developed by continuing education providers, and funded by commercial interests can still yield a positive impact on self-reported changes in behavior.

There are a growing number of state policy, systems-level, and payer interventions being promulgated to address the prescription opioid misuse problem [31]. While these interventions appear to be efficient solutions to controlling prescription opioid misuse, such blunt instruments risk the unintended consequences of making opioids inaccessible for those that currently or potentially may benefit. In contrast, quality, targeted education can empower clinicians to make appropriate and informed clinical decisions about whether or not to initiate, continue, change or discontinue opioids for each individual patient suffering from chronic pain based on a careful benefit vs risk/harm assessment [38,39]. Educational approaches will maintain access for patients who do, or can, benefit from such medications while mitigating the potential risks to those who are not benefiting or are being harmed. While there has been considerable skepticism about continuing medical education's (CME) ability to improve clinicians' practices [40], recent meta-analyses have supported that, overall, CME, especially using serial educational interventions, is effective in changing clinician performance [41,42]. As opposed to regulations limiting clinician practice, education is a tool that can help clinicians develop the nuanced, informed approach necessary for individualizing patient care with regards to safe opioid prescribing.

Questions remain on next steps to enhance the current REMS education. This speaks to the need for a clinician awareness campaign regarding the availability of these REMS trainings. While the REMS program is mandatory

for the ER/LA opioid manufacturers, it is not mandatory for clinicians [37]. In one primary care survey [43], less than 10% of physicians were "very familiar" with the REMS education. Since the first announcement by the FDA regarding the opioid REMS program there has been debate as to whether clinician education should be mandated and linked to US Drug Enforcement Administration (DEA) licensure [44]. A training requirement is not unprecedented, as there is such a requirement within the Drug Addiction Treatment Act of 2000 [45] (DATA 2000) which limits the prescribing of buprenorphine for the treatment of opioid use disorders to those that have completed an 8-h training. While the DATA 2000 training requirement is highly supported by addiction medicine/psychiatry societies, only a small number of physicians have taken the training, which has resulted in limited access to this life-saving treatment for those who need it [46,47]. Thus, it would be important to link mandated opioid prescribing training to DEA licensure to avoid having clinicians "opt out" of this requirement leading to decreased treatment access and burn-out for those clinicians that "opt in." However, to make education mandatory there must be evidence that education would positively impact prescription opioid misuse without decreasing appropriate access to prescription opioids. Alternatively the goal could be mandatory demonstration of clinical competence allowing those clinicians well trained in this area to "test out" of the requirement. Finally, including practice-based performance improvement or quality improvement efforts following *SCOPE of Pain* education may lead to more robust clinical practice changes, but would require a more substantial investment in time and resources [48,49].

With any intervention, education or otherwise, it would be ideal to measure changes in clinical outcomes, such as fewer opioid overdoses and overdose deaths, and fewer emergency department visits. However, these important clinical outcomes would be difficult to attribute to any education alone as there are other concurrent efforts [31] that could also improve these outcomes including naloxone distribution [50], expansion of office-based opioid addiction treatment [51] with buprenorphine and naltrexone, and the availability of abuse-deterrent opioid formulations [52,53]. Evaluations focusing on decreasing the number of opioid prescriptions [54] are difficult to interpret as it is unclear what the correct amount of opioid prescribing should be to concurrently decrease opioid misuse while maintaining access to opioids for those who benefit.

The *SCOPE of Pain* evaluation has several limitations worth considering. Because our post-program assessments, with the exception of knowledge-testing questions, were self-reported by the participants there is risk of self-assessment bias and social desirability bias. To mitigate social desirability bias, participants completed their follow-up surveys anonymously to an independent evaluator. Program participants with a particular interest in the program objectives were potentially more likely to participate in the 2-month follow-up assessment. In addition, as this was a voluntary program, those that were interested in changing practice were more likely to enroll and, therefore, may have a greater change than the general population of practitioners. Therefore, there is the potential for participant self-selection bias. However, the demographics of those that completed the 2-month follow-up were similar to those that did not. The lack of a control group makes it difficult to attribute participant changes solely to *SCOPE of Pain*, however, many of the questions asked participants to attribute changes specifically to the program. While we found improvements in participant clinical knowledge, confidence, attitudes, and self-reported practice, we were unable by study design to detect if these improvements impacted patient care. Future research on ER/LA opioid REMS education should consider a more in-depth investigation on the impact on patients' care [55].

There were a few areas where this model did not succeed. First, the FDA Blueprint is very comprehensive and requires up to 2–3 hours of education. Some participants, particularly for the web-based activity, started the program but did not complete it. For the live activity, participants were required to pass a post-test to be counted as a program completer. As clinicians are not accustomed to completing a post-test for live activities, some participants attended the entire meeting, but could not be counted as completers of the education because they did not take the post-test.

In summary, the ER/LA opioid REMS training *SCOPE of Pain* improved clinician-level safe opioid prescribing outcomes, however, its impact on mitigating opioid misuse risk and harm while maintaining access to opioids for those that are or would benefit remains an unanswered question. While education cannot be the only strategy to combat this national crisis, it can help improve clinician behaviors and be a major part of the solution.

Acknowledgment

Boston University School of Medicine partnered with the Federation of State Medical Boards and the Council of Medical Specialty Societies in the development, execution, and promotion of the *SCOPE of Pain* program.

References

1 Institute of Medicine Committee on Advancing Pain Research CaE. The National Academies Collection: Reports funded by National Institutes of Health. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. Washington (DC): National Academies Press (US) National Academy of Sciences; 2011.

2 Dzau VJ, Pizzo PA. Relieving pain in America: Insights from an Institute of Medicine committee. JAMA 2014;312:1507–8.

3 Goren A, Mould-Quevedo J, daCosta DiBonaventura M. Prevalence of pain reporting and associated health outcomes across emerging markets and developed countries. Pain Med 2014;15: 1880–91.

4 Sessle BJ. The pain crisis: What it is and what can be done. Pain Res Treat 2012;2012:703947.

5 Fishbain DA, Lewis JE, Gao J. The pain suicidality association: A narrative review. Pain Med 2014;15: 1835–49.

6 Jamison RN, Clark JD. Opioid medication management: Clinician beware! Anesthesiology 2010;112: 777–8.

7 Atluri S, Sudarshan G, Manchikanti L. Assessment of the trends in medical use and misuse of opioid analgesics from 2004 to 2011. Pain Physician 2014;17: E119–28.

8 Bohnert AS, Valenstein M, Bair MJ, et al. Association between opioid prescribing patterns and opioid overdose-related deaths. JAMA 2011;305: 1315–21.

9 Braden JB, Russo J, Fan MY, et al. Emergency department visits among recipients of chronic opioid therapy. Arch Intern Med 2010;170:1425–32.

10 Dunn KM, Saunders KW, Rutter CM, et al. Opioid prescriptions for chronic pain and overdose: A cohort study. Ann Intern Med 2010;152:85–92.

11 QuickStats: Number of deaths from poisoning, drug poisoning, and drug poisoning involving opioid analgesics—United States, 1999–2010. Morb Mortal Wkly Rep 2013;62:234.

12 King NB, Fraser V, Boikos C, Richardson R, Harper S. Determinants of increased opioid-related mortality in the United States and Canada, 1990-2013: A systematic review. Am J Public Health 2014;104: e32–42.

13 Eisenberg E, McNicol ED, Carr DB. Efficacy and safety of opioid agonists in the treatment of neuropathic pain of nonmalignant origin: Systematic review and meta-analysis of randomized controlled trials. JAMA 2005;293:3043–52.

14 Noble M, Treadwell JR, Tregear SJ, et al. Long-term opioid management for chronic noncancer pain. Cochrane Database Syst Rev 2010;1(1):Cd006605.

15 Reuben DB, Alvanzo AA, Ashikaga T, et al. National institutes of health pathways to prevention workshop: The role of opioids in the treatment of chronic pain. Ann Intern Med 2015;162:295–300.

16 Boards FoSM. Model Policy on the Use of Opioid Analgesics in the Treatment of Chronic Pain. 2014; Available at: http://library.fsmb.org/pdf/pain_policy_july2013.pdf. Accessed February 25, 2015.

17 Gourlay DL, Heit HA, Almahrezi A. Universal precautions in pain medicine: A rational approach to the treatment of chronic pain. Pain Med 2005;6:107–12.

18 Chou R, Fanciullo GJ, Fine PG, et al. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. J Pain 2009;10:113–30.

19 Franklin GM. Opioids for chronic noncancer pain: A position paper of the American Academy of Neurology. Neurology 2014;83:1277–84.

20 Nuckols TK, Anderson L, Popescu I, et al. Opioid prescribing: A systematic review and critical appraisal of guidelines for chronic pain. Ann Intern Med 2014;160: 38–47.

21 Manchikanti L, Abdi S, Atluri S, et al. American Society of Interventional Pain Physicians (ASIPP) guidelines for responsible opioid prescribing in chronic non-cancer pain: Part 2–guidance. Pain Physician 2012;15:S67–116.

22 Starrels JL, Becker WC, Weiner MG, et al. Low use of opioid risk reduction strategies in primary care even for high risk patients with chronic pain. J Gen Intern Med 2011;26:958–64.

23 Hildebran C, Cohen DJ, Irvine JM, et al. How clinicians use prescription drug monitoring programs: A qualitative inquiry. Pain Med 2014;15:1179–86.

24 Sekhon R, Aminjavahery N, Davis CN Jr., Roswarski MJ, Robinette C. Compliance with opioid treatment guidelines for chronic non-cancer pain (CNCP) in primary care at a Veterans Affairs Medical Center (VAMC). Pain Med 2013;14:1548–56.

25 Upshur CC, Luckmann RS, Savageau JA. Primary care provider concerns about management of chronic pain in community clinic populations. J Gen Intern Med 2006;21:652–5.

26 Heavner JE. Teaching pain management to medical students. Pain Pract 2009;9:85.

27 Mezei L, Murinson BB. Pain education in North American medical schools. J Pain 2011;12: 1199–208.

28 Watt-Watson J, McGillion M, Hunter J, et al. A survey of prelicensure pain curricula in health science faculties in Canadian universities. Pain Res Manag 2009; 14:439–44.

29 Watt-Watson J, Hunter J, Pennefather P, et al. An integrated undergraduate pain curriculum, based on IASP curricula, for six health science faculties. Pain 2004;110:140–8.

30 Morley-Forster PK, Pergolizzi JV, Taylor R Jr., Axford-Gatley RA, Sellers EM. Mitigating the risk of opioid abuse through a balanced undergraduate pain medicine curriculum. J Pain Res 2013;6:791–801.

31 Haegerich TM, Paulozzi LJ, Manns BJ, Jones CM. What we know, and don't know, about the impact of state policy and systems-level interventions on prescription drug overdose. Drug Alcohol Depend 2014; 145c:34–47.

32 Administration USFaD. Postmarket Drug Safety Information for Patients and Providers—Approved Risk Evaluation and Mitigation Strategies (REMS). [WebContent]. 2014; Available at: http://www.fda.gov/drugs/drugsafety/postmarketdrugsafetyinformationforpatientsandproviders/ucm111350.htm. Accessed February 25, 2015.

33 Brooks MJ. Mitigating the safety risks of drugs with a focus on opioids: Are risk evaluation and mitigation strategies the answer? Mayo Clin Proc 2014;89: 1673–84.

34 Center for Drug Evaluation and Research. Risk Evaluation and Mitigation Strategy (REMS) for Extended-Release and Long-Acting Opioids. [WebContent]. 2014; Available at: http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm163647.htm. Accessed February 25, 2015.

35 Gudin JA. The changing landscape of opioid prescribing: Long-acting and extended-release opioid class-wide Risk Evaluation and Mitigation Strategy. Ther Clin Risk Manag 2012;8:209–17.

36 FDA. Extended-release (ER) and long-acting (LA) opioid analgesics risk evaluation and mitigation strategy (REMS)—UCM277916.pdf. 2012; Available at: http://www.fda.gov/downloads/Drugs/DrugSafety/InformationbyDrugClass/UCM277916.pdf. Accessed February 25, 2015.

37 Becker WC, Fiellin DA. Federal plan for prescriber education on opioids misses opportunities. Ann Intern Med 2012;157:205–6.

38 Nicolaidis C. Police officer, deal-maker, or health care provider? Moving to a patient-centered framework for chronic opioid management. Pain Med 2011;12:890–7.

39 Alford DP. Chronic back pain with possible prescription opioid misuse. JAMA 2013;309:919–25.

40 Grimshaw JM, Thomas RE, MacLennan G, et al. Effectiveness and efficiency of guideline dissemination and implementation strategies. Health Technol Assess 2004;8(6):iii–iv,1–72.

41 Marinopoulos SS, Dorman T, Ratanawongsa N, et al. Effectiveness of continuing medical education. Evid Rep Technol Assess (Full Rep) 2007;149:1–69.

42 Davis D, Bordage G, Moores CLK, et al. The science of continuing medical education: Terms, tools, and gaps effectiveness of continuing medical education: American college of chest physicians evidence-based educational guidelines. Chest 2009; 135:8S–16S.

43 Salinas GD, Robinson CO, Abdolrasulnia M. Primary care physician attitudes and perceptions of the impact of FDA-proposed REMS policy on prescription of extended-release and long-acting opioids. J Pain Res 2012;5:363–69.

44 Cain J. Mandatory CME on opioid prescribing fails to address true causes of prescription drug abuse. Pain Med 2013;14:1821–2.

45 (SAMHSA) SAaMHSA. Drug Addiction Treatment Act of 2000. 2000; Available at: http://buprenorphine.samhsa.gov/fulllaw.html. (accessed January 2015).

46 West JC, Kosten TR, Wilk J, et al. Challenges in increasing access to buprenorphine treatment for opiate addiction. Am J Addict 2004;13(Suppl 1):S8–16.

47 Li X, Shorter D, Kosten TR. Buprenorphine in the treatment of opioid addiction: Opportunities, challenges and strategies. Expert Opin Pharmacother 2014;15:2263–75.

48 Perkins RB, Zisblatt L, Legler A, et al. Effectiveness of a provider-focused intervention to improve HPV vaccination rates in boys and girls. Vaccine 2015;33: 1223–9.

49 Zisblatt L, Kues JR, Davis N, Willis CE. The long-term impact of a performance improvement continuing medical education intervention on osteoporosis screening. J Contin Educ Health Prof 2013; 33:206–14.

50 Beletsky L, Rich JD, Walley AY. Prevention of fatal opioid overdose. JAMA 2012;308:1863–4.

51 Bowman S, Eiserman J, Beletsky L, Stancliff S, Bruce RD. Reducing the health consequences of opioid addiction in primary care. Am J Med 2013; 126:565–71.

52 Stanos SP, Bruckenthal P, Barkin RL. Strategies to reduce the tampering and subsequent abuse of long-acting opioids: Potential risks and benefits of formulations with physical or pharmacologic deterrents to tampering. Mayo Clin Proc 2012;87:683–94.

53 Cassidy TA, DasMahapatra P, Black RA, Wieman MS, Butler SF. Changes in prevalence of prescription opioid abuse after introduction of an abuse-deterrent opioid formulation. Pain Med 2014; 15:440–51.

54 Garg RK, Fulton-Kehoe D, Turner JA, et al. Changes in opioid prescribing for Washington workers' compensation claimants after implementation of an opioid dosing guideline for chronic noncancer pain: 2004 to 2010. J Pain 2013;14:1620–8.

55 Willy ME, Graham DJ, Racoosin JA, et al. Candidate metrics for evaluating the impact of prescriber education on the safe use of extended-release/long-acting (ER/LA) opioid analgesics. Pain Med 2014;15: 1558–68.

The NEW ENGLAND JOURNAL of MEDICINE

Perspective

JANUARY 28, 2016

Opioid Prescribing for Chronic Pain — Achieving the Right Balance through Education

Daniel P. Alford, M.D., M.P.H.

In recent decades, the United States has seen a dramatic increase in opioid prescribing for chronic pain. That growth has been associated with increasing misuse of prescription opioids[1] and has led to increases in deaths due to unintentional opioid overdose and in the number of people seeking treatment for opioid-misuse disorders. There's probably 100% agreement that we, as a profession and society, have become overly opioid-centric in our management of chronic pain. Far more controversial are the role of long-term opioid therapy in managing chronic pain and the best strategy for ending the epidemic of prescription-opioid misuse.

Groups lobbying against prescribing opioids for chronic pain remind us that the effectiveness of long-term opioid therapy has been inadequately studied.[2] I believe that this is a case of absence of evidence rather than evidence of absence. As we await scientific evidence, questions remain regarding how best to address the epidemic of prescription-opioid misuse now. Groups advocating quick fixes believe that regulations that limit opioid availability are the best plan. This strategy is well intentioned and will certainly reduce opioid prescribing, but such blunt approaches will also limit access to opioids for patients who are benefiting or may potentially benefit from them.

Such an objection is not about protecting clinicians' autonomy, but rather about protecting access to opioids for our patients who are in severe pain. These regulations will lead some clinicians to refuse to prescribe opioids even when they're indicated, seeing it as too risky or too much work. They also create a climate of mistrust between patients and their health care teams. Clinicians are accused of both undertreating pain and overprescribing opioids, and patients with chronic pain who take opioids are viewed with suspicion. In addition, we don't know what impact indiscriminate reductions in access to prescription opioids will have on long-term clinical outcomes.

Prescriber education is a more finely tuned approach to addressing the opioid-misuse epidemic, allowing us to individualize care on the basis of a patient's needs after a careful benefit–risk assessment. That, after all, is the way we manage all chronic diseases. Education can empower clinicians to make appropriate, well-informed decisions about whether to initiate, continue, modify, or discontinue opioid treatment for each individual patient at each clinical encounter. Education has the potential to both reduce overpre-

scribing and ensure that patients in need retain access to opioids.

In July 2012, a national voluntary prescriber-education initiative was begun. The Food and Drug Administration (FDA) approved a single shared Risk Evaluation and Mitigation Strategy (REMS) requiring manufacturers of extended-release and long-acting opioid analgesics to fund accredited education on safe opioid prescribing based on an FDA curricular blueprint. Although this program has not yet trained the targeted number of prescribers, a recent evaluation suggests that REMS education can shift clinicians' self-reported practice toward safer, guideline-concordant care.[3] Comprehensive training in safe opioid prescribing is needed at all stages of medical education (undergraduate, graduate, and continuing), since training in this area has historically been lacking. This education must go beyond opioid prescribing to include comprehensive, multimodal pain management,[4] and it can be designed for the entire health care team: our nursing, pharmacy, and behavioral health colleagues have also been inadequately trained. This education can be coupled with enhanced clinical systems that support these new practices, including decision-support tools in electronic medical records.

Managing chronic pain is complex. Chronic pain is subjective and can present without objective evidence of tissue injury, which results in diagnostic uncertainties despite our most thorough assessments. Patients with chronic pain are desperately seeking immediate relief from their suffering; they tend to have unrealistic expectations regarding the potential benefits of opioids and not to fully appreciate the degree of risk conferred by escalating their own doses in a desperate (yet futile) attempt to obtain pain relief.

Clinicians have limited tools at their disposal to help these patients. Our reimbursement system favors the use of medications alone, despite evidence supporting multimodal care. Clinicians often have no easy access to nonpharmacologic therapies and cannot obtain pain consultations because there are too few pain specialists offering comprehensive pain care. Moreover, whereas clinicians can use objective measures to guide their management of other chronic diseases, here they must rely solely on the patient's (or family's) reports of benefits (such as improved function) and harms (such as loss of control). Clinicians are thus left basing treatment decisions on a brief subjective assessment of whether there's enough benefit to justify continued opioid therapy or enough harm to justify discontinuing it.

Many guidelines for safe opioid prescribing exist, and all include similar recommendations, including use of assessments of risk of opioid misuse, signed agreements that include informed consent, and monitoring strategies such as drug testing, pill counts, and prescription-drug–monitoring programs. But it's also essential for safe-opioid-prescribing education to include teaching of effective communication skills. How does one explain to a patient who's desperate for help that an opioid treatment must be discontinued despite the lack of alternative treatments? How does one deal with a new patient who is already taking high-dose opioids and insists that it's the only treatment that helps?

It's important for clinicians to judge the opioid treatment rather than the patient.[5] When opioid therapy is deemed too risky or inadequately beneficial, discontinuing it means abandoning not the patient but merely an inappropriate treatment. When a clinician changes the treatment approach with a patient who tests positive for an illicit drug, that response is not about punishing the patient, but about changing the treatment plan on the basis of a new risk and addressing a newly identified problem.

When a clinician determines that discontinuing opioid treatment is appropriate, the patient may disagree and express anger. Is such frustration attributable to an appropriate desire for pain relief, inappropriate drug seeking, or a combination of the two? Though a patient-centered approach is always preferred, there are times in managing opioid therapy for patients with chronic pain when the clinician's approach must be at odds with the patient's request but intended to keep the patient safe. Such an approach may be perceived as paternalistic and may threaten the therapeutic alliance. Although transparent communication leading to a patient-centered approach is important, it goes only so far when a patient with chronic pain also shows signs of opioid misuse (e.g., unsanctioned dose escalation), necessitating discontinuation of opioid treatment.

Addressing the crisis of prescription-opioid misuse has become a national priority. To judge from the progress of the REMS program for extended-release and long-acting opioids, voluntary prescriber education may be insufficient to address this problem. Mandatory education may be re-

quired. If so, it will be important to link mandated education to medical licensure to avoid having clinicians opt out — since that could lead to reduced treatment access, as well as burnout among the clinicians who opt in. Alternatively and ideally, we could mandate proof of clinical competence, allowing clinicians who are already well trained to test out of an education requirement. Unfortunately, it may be impossible to measure such skill-based competence on a national scale.

An audio interview with Dr. Alford is available at NEJM.org

I believe that the medical profession is compassionate enough and bright enough to learn how to prescribe opioids, when they are indicated, in ways that maximize benefit and minimize harm. Though managing chronic pain is complicated and time consuming and carries risk, we owe it to our patients to ensure access to comprehensive pain management, including the medically appropriate use of opioids.

Disclosure forms provided by the author are available with the full text of this article at NEJM.org.

From the Boston University School of Medicine and Boston Medical Center — both in Boston.

1. Dart RC, Surratt HL, Cicero TJ, et al. Trends in opioid analgesic abuse and mortality in the United States. N Engl J Med 2015;372:241-8.
2. Chou R, Turner JA, Devine EB, et al. The effectiveness and risks of long-term opioid therapy for chronic pain: a systematic review for a National Institutes of Health Pathways to Prevention Workshop. Ann Intern Med 2015;162:276-86.
3. Alford DP, Zisblatt L, Ng P, Hayes SM, Peloquin S, Hardesty I, White JL. SCOPE of Pain: an evaluation of an opioid Risk Evaluation and Mitigation Strategy continuing education program. Pain Med 2015 August 25 (Epub ahead of print).
4. Fishman SM, Young HM, Lucas Arwood E, et al. Core competencies for pain management: results of an interprofessional consensus summit. Pain Med 2013;14:971-81.
5. Nicolaidis C. Police officer, deal-maker, or health care provider? Moving to a patient-centered framework for chronic opioid management. Pain Med 2011;12:890-7.

DOI: 10.1056/NEJMp1512932

Bibliography

SCOPE of Pain Publications

Alford DP, Lazure P, Murray S, Hardesty I, Krause JR, White JL. National trends in prescription opioid risk mitigation practices: Implications for prescriber education. *Pain Med*. 2019;20(5):907-915.

Alford DP, Zisblatt L, Ng P, Hayes SM, Peloquin S, Hardesty I, White JL. SCOPE of Pain: an evaluation of an opioid Risk Evaluation and Mitigation Strategy continuing education program. *Pain Med*. 2016; 17:52-63

Cushman PA, Liebschutz JM, Hodgkin JG, Shanahan CW, White JL, Hardesty I, Alford DP. What do providers want to know about safe opioid prescribing? A qualitative analysis of their questions. *Subst Abus*. 2017; 38 (2): 222-229

Zisblatt L, Hayes SM, Lazure P, Hardesty I, White JL, Alford DP. Safe and competent opioid prescribing education: Increasing dissemination with a train-the-trainers program. *Subst Abus*. 2017; 38 (2):168-176

References

Akbik H, et al. Validation and clinical application of the Screener and Opioid Assessment for Patients with Pain (SOAPP). *J Pain Symptom Manage.* 2006;32(3):287-93.

Alford DP, Cohen M and Reynolds E. How Would You Manage Opioid Use in These Three Patients?: Grand Rounds Discussion From Beth Israel Deaconess Medical Center. *Ann Intern Med.* 2016;166(7):506-513.

Alford DP. Weighing in on opioids for chronic pain: the barriers to change. *JAMA.* 2013;310(13):1351-2.

American Geriatrics Society Panel. (2009). Pharmacological management of persistent pain in older persons. *J Am Geriatr Soc*. 2009;57(8):1331-46.

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.) Arlington, VA: American Psychiatric Publishing; 2013.

Argoff CE and Silvershein DI. A comparison of long- and short-acting opioids for the treatment of chronic noncancer pain: tailoring therapy to meet patient needs. *Mayo Clin Proc*. 2009;84(7):602-12.

Argoff CE, et al. Multimodal analgesia for chronic pain: rationale and future directions. *Pain Med*. 2009;10(2): S53-S66.

Argoff CE, et al. Rational Urine Drug Monitoring in Patients Receiving Opioids for Chronic Pain: Consensus Recommendations*. Pain Med.* 2018;19(1):97-117.

Arnold RM, Han P and Seltzer D. Opioid Contracts in Chronic Nonmalignant Pain Management: Objectives and Uncertainties. *Am J Med.* 2006;19(4):292-296

Ballantyne JC and Mao J. Opioid therapy for chronic pain. *NEJM.* 2003;349(20):1943-53.

Barnett ML, Olenski AR and Jena AB. Opioid-Prescribing Patterns of Emergency Physicians and Risk of Long-Term Use. *NEJM.* 2017;376(7):663-673.

Baron MJ. and McDonald PW. Significant pain reduction in chronic pain patients after detoxification from high-dose opioids. *J Opioid Manage*. 2006;2(5):277-82.

Beletsky L, Rich JD and Walle, AY. Prevention of Fatal Opioid Overdose. *JAMA.* 2012;308(18): 1863–1864.

Benyamin R, et al. Opioid complications and side effects. *Pain Physician.* 2008;11(2 Suppl):S105-20.

Berna C, Kullich RJ and Rathmell JP. Tapering Long-term Opioid Therapy in Chronic Noncancer Pain: Evidence and Recommendations for Everyday Practice. *Mayo Clin Proc.* 2015;90(6):828-42.

Bohnert AS, et al. Association between opioid prescribing patterns and opioid overdose-related deaths. *JAMA*. 2011;305(13):1315-21.

Braden JB, et al. Emergency department visits among recipients of chronic opioid therapy. *Arch Intern Med.* 2010;170(16):1425-32.

Breivik H, et al. Assessment of Pain. *Br J Anaesth*. 2008;101(1):17-24.

Brush, DE. Complications of long-term opioid therapy for management of chronic pain: the paradox of opioid-induced hyperalgesia*. J Med Toxicol*. 2012;8(4):387-92.

Buchman DZ, Ho A and Illes J. You Present like a Drug Addict: Patient and Clinician Perspectives on Trust and Trustworthiness in Chronic Pain Management. *Pain Med.* 2016;17(8): 1394–1406.

Busse JW, et al. Opioids for Chronic Noncancer Pain: A Systematic Review and Meta-analysis. *JAMA.* 2018;320(23):2448-2460.

Cassidy TA, et al. Changes in prevalence of prescription opioid abuse after introduction of an abuse-deterrent opioid formulation. *Pain Med.* 2014;15(3):440-51.

Chang AK, Bijur P and Essess D. Effect of a Single Dose of Oral Opioid and Nonopioid Analgesics on Acute Extremity Pain in the Emergency Department: A Randomized Clinical Trial. *JAMA*. 2017;318(17):1661-1667.

Chang G, et al. Opioid tolerance and hyperalgesia. *Med Clin North Am*. 2007 Mar;91(2):199-211.

Chou R, et al. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J Pain*. 2009;10(2):113-30.

Chou R, et al. Management of Postoperative Pain: A Clinical Practice Guideline From the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of

Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *J Pain*. 2016;17(2): 131-157.

Chou R, et al. Methadone safety: a clinical practice guideline from the American Pain Society and College on Problems of Drug Dependence, in collaboration with the Heart Rhythm Society. *J Pain*. 2014;15(4):321-37.

Chou R, et al. The effectiveness and risks of long-term opioid therapy for chronic pain: a systematic review for a National Institutes of Health Pathways to Prevention Workshop. *Ann Intern Med.* 2015;162(4):276-86.

Chou R, Peterson K and Helfand M. Comparative efficacy and safety of skeletal muscle relaxants for spasticity and musculoskeletal conditions: a systematic review. *J Pain Symptom Manage*. 2003;28(2):140-75.

Christo PJ, et al. Urine drug testing in chronic pain. *Pain Physician*. 2011;14(2):123-43.

Clarke H, et al. Rates and risk factors for prolonged opioid use after major surgery: population based cohort study. *BMJ.* 2014;348:1251.

Cote J and Montgomery L. Sublingual buprenorphine as an analgesic in chronic pain: a systematic review. *Pain Med.* 2014;15(7):1171-8.

Darnall BD, Ziadni M and Stieg R. Patient-Centered Prescription Opioid Tapering in Community Outpatients With Chronic Pain. *JAMA Intern Med.* 2018;178(5):707-708.

Davies AN, et al. (2009). The management of cancer-related breakthrough pain: recommendations of a task group of the Science Committee of the Association for Palliative Medicine of Great Britain and Ireland. *Eur J Pain.* 2009;13(4):331-8.

Davison SN. Management of chronic pain in chronic kidney disease. *UpToDate*. Retrieved from: https://www.uptodate.com/contents/management-of-chronic-pain-in-chronic-kidney-disease. Accessed January 2019

Delgado MK, et al. National Variation in Opioid Prescribing and Risk of Prolonged Use for Opioid-Naive Patients Treated in the Emergency Department for Ankle Sprains. *Ann Emerg Med.* 2018 Oct;72(4):389-400.

Deyo RA, et al. Association Between Initial Opioid Prescribing Patterns and Subsequent Long-Term Use Among Opioid-Naïve Patients: A Statewide Retrospective Cohort Study. *J Gen Intern Med*. 2017;32:21–27.

Dowell D, Haegerich T and Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. *JAMA.* 2016;315(15):1624-1645.

Dunn KM, et al. Opioid prescriptions for chronic pain and overdose: a cohort study. *Ann Intern Med.* 2010;152(2):85-92.

Dzau, VJ and Pizzo PA. Relieving Pain in America Insights From an Institute of Medicine Committee. *JAMA*. 2014;312(15):1507-1508.

Edelman EJ, Gordon K and Crothers K. Association of Prescribed Opioids With Increased Risk of Community-Acquired Pneumonia Among Patients With and Without HIV. *JAMA Intern Med.* 2019 Jan 7. [Epub ahead of print]

Eisenberg E, Suzan E and Pud D. Opioid-induced hyperalgesia (OIH): a real clinical problem or just an experimental phenomenon? *J Pain Symptom Manage*. 2014;49(3):632-6.

Elia N, Lysakowski C and Tramer MR. (2005). Does multimodal analgesia with acetaminophen, nonsteroidal antiinflammatory drugs, or selective cyclooxygenase-2 inhibitors and patient-controlled analgesia morphine offer advantages over morphine alone? Meta-analyses of randomized trials. *Anesthesiology.* 103(6):1296-304.

Fine PG, et al. Establishing "best practices" for opioid rotation: conclusions of an expert panel. *J Pain Symptom Manage.* 2009;38(3):418-25.

Fink DS, et al. Association Between Prescription Drug Monitoring Programs and Nonfatal and Fatal Drug Overdoses: A Systematic Review. *Ann Intern Med*. 2018;168(11):783-790.

Finnerup NB. Nonnarcotic Methods of Pain Management. *N Eng J Med*. 2019 Jun 20;380(25):2440-2448.

Finnerup NB, Sindrup SH and Jensen TS. The evidence for pharmacological treatment of neuropathic pain. *Pain.* 2010;150(3):573-81.

Finney FT, et al. Rate of Opioid Prescriptions for Patients With Acute Ankle Sprain. *Ann Intern Med*. 2019 Jul 9. doi: 10.7326/M19-0679. [Epub ahead of print].

Fishman SM and Kreis PG. The opioid contract. *Clin J Pain.* 2002;18(4 Suppl):S70-5.

Flor H, et al. Efficacy of multidisciplinary pain treatment centers: a meta-analytic review. *Pain.* 1992 May;49(2):221-30.

Frank JW, et al. Patient Outcomes in Dose Reduction or Discontinuation of Long-Term Opioid Therapy: A Systematic Review. *Ann Intern Med.* 2017;167(3):181-191.

Fredheim OM, et al. (2008). Clinical pharmacology of methadone for pain*. Acta Anaesth Scand.* 2008;52(7):879-89.

Gaither JR, et al. National Trends in Hospitalizations for Opioid Poisonings Among Children and Adolescents, 1997 to 2012. *JAMA Pediatrics.* 2016;170(12):1195-1201.

Gilron I, Baron R and Jensen T. Neuropathic pain: principles of diagnosis and treatment. *Pain.* 2015;90(4):532-45.

Gilron I. Morphine, gabapentin, or their combination for neuropathic pain. *NEJM.* 2005;352(13):1324-34.

Gomes T, et al. Trends in opioid use and dosing among socio-economically disadvantaged patients. *Open Med*. 2011;5(1): e13–e22.

Goodman CW and Brett AS . Gabapentin and Pregabalin for Pain - Is Increased Prescribing a Cause for Concern? *NEJM.* 2017;377(5):411-414.

Gourlay DL, Heit HA and Almahrezi A. Universal precautions in pain medicine: a rational approach to the treatment of chronic pain. *Pain Med*. 2005;6(2):107-12.

Haegerich TM, et al. What we know, and don't know, about the impact of state policy and systems-level interventions on prescription drug overdose. *Drug Alcohol Depend.* 2014;145:34-47.

Haffajee RL, Jena AB and Weiner SG. Mandatory use of prescription drug monitoring programs. *JAMA*. 2015;313(9):891-2.

Hamilton JP, et al. Management of pain in patients with advanced chronic liver disease or cirrhosis. *UpToDate*. https://www.uptodate.com/contents/management-of-pain-in-patients-with-advanced-chronic-liver-disease-or-cirrhosis. Accessed January 2019.

Hill J and Alford DP. Prescription Medication Misuse. *Semin Neurol.* 2018;38(6):654-664.

Hill JC, et al. A primary care back pain screening tool: identifying patient subgroups for initial treatment. *Arthritis Care Res*. 2008;59(5):632-41.

Hoppe JA, Kim H and Heard K. Association of emergency department opioid initiation with recurrent opioid use. *Ann Emer Med*. 2015;65(5):493-499.e4.

Huxtable CA, et al. Acute pain management in opioid-tolerant patients: a growing challenge. *Anaesth Intensive Care.* 2011;39(5):804-23.

Ilgen MA, Kleinberg F and Ignatio R. Noncancer Pain Conditions and Risk of Suicide. *JAMA Psychiatry.* 2013;70(7):692-7.

Institute of Medicine (US) Committee on Advancing Pain Research, Care, and Education. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington (DC): National Academies Press (US); 2011.

Inturrisi CE. Clinical pharmacology of opioids for pain. *Clin J Pain.* 2002;18(4 Suppl):S3-13.

Ives J, et al. Predictors of opioid misuse in patients with chronic pain: a prospective cohort study. *BMC Health Serv Res.* 2006;6(46).

Kamper SJ, et al. Multidisciplinary biopsychosocial rehabilitation for chronic low back pain. *Cochrane Database Syst Rev.* 2014 Sep 2;(9):CD000963.

Kessler ER, et al. Cost and Quality Implications of Opioid-Based Postsurgical Pain Control Using Administrative Claims Data from a Large Health System: Opioid-Related Adverse Events and Their Impact on Clinical and Economic Outcomes. *Pharmacotherapy*. 2013;33(4):383-91.

Kidner CL, Mayer TG and Gatchel RJ. Higher opioid doses predict poorer functional outcome in patients with chronic disabling occupational musculoskeletal disorders. *J Bone Joint Surg.* 2009;91(4):919.

Kobus AM, et al. Correlates of higher-dose opioid medication use for low back pain in primary care. *J Pain.* 2012;13(11):1131-8.

Krebs EE, et al. Development and initial validation of the PEG, a three-item scale assessing pain intensity and interference. *J Gen Intern Med*. 2009;24(6), 733-8.

Krebs EE, Gravely A and Nugent S. Effect of Opioid vs Nonopioid Medications on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain The SPACE Randomized Clinical Trial. *JAMA*. 2018;319(9):872-882.

Kroenke K, et al. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Ann Intern Med*. 2007;146(5):317-25.

Kroenke K, et al. Challenges with Implementing the Centers for Disease Control and Prevention Opioid Guideline: A Consensus Panel Report. *Pain Med.* 2019 Jan 25:1-12. [Epub ahead of print]

Kroenke K, Spitzer RL and Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. *Med Care.* 2003;41(11):1284-92.

Larochelle MR, et al. Medication for Opioid Use Disorder After Nonfatal Opioid Overdose and Association With Mortality: A Cohort Study. *Ann Intern Med.* 2018;169(3):137-145.

Larochelle MR, et al. Opioid Prescribing After Nonfatal Overdose and Association With Repeated Overdose: A Cohort Study. *Ann Intern Med.* 2016;164(1):1-9.

Larochelle MR, Zhang F and Ross-Degnan F. Rates of Opioid Dispensing and Overdose After Introduction of Abuse-Deterrent Extended-Release Oxycodone and Withdrawal of Propoxyphene. *JAMA Intern Med*. 2015;175(6):978-987.

Lee M, et al. A comprehensive review of opioid-induced hyperalgesia. *Pain Physician*. 2011;14(2):145-61.

Liebschutz JM, et al. Clinical factors associated with prescription drug use disorder in urban primary care patients with chronic pain. *J Pain*. 2010;11(11):1047-55.

Liebschutz JM, et al. Improving Adherence to Long-term Opioid Therapy Guidelines to Reduce Opioid Misuse in Primary Care: A Cluster-Randomized Clinical Trial. *JAMA Intern Med*. 2017;177:1265-1272.

Loeser JD and Schatman ME. Chronic pain management in medical education: a disastrous omission. *Postgrad Med.* 2017;129(3):332-335.

Manchikanti L, et al. A systematic review of randomized trials of long-term opioid management for chronic non-cancer pain. *Pain Physician.* 2011;14(2):91-121.

Mason ST, et al. Assessment of Acute Pain, Pain Relief, and Patient Satisfaction. In D. C. Turk and R. Melzack (Eds.), *Handbook of Pain Assessment*. New York, NY: Guilford Press; 2011.

Mazer-Amirshahi M, et al. Rising opioid prescribing in adult U.S. emergency department visits: 2001-2010. *Acad Emer Med.* 2014;21(3):236-43.

McCaffrey SA, et al. Economic evaluation of the randomised, double-blind, placebo-controlled study of subcutaneous ketamine in the management of chronic cancer pain. *Pain Med*. 2019;33(1):74-81.

McCleane G and Smith HS. Opioids for persistent noncancer pain. *Anesthesiol Clin.* 2007;25(4):787-807, vi-ii.

McDaid C, et al. Paracetamol and selective and non-selective non-steroidal anti-inflammatory drugs (NSAIDs) for the reduction of morphine-related side effects after major surgery: a systematic review. *Health Technol Assess*. 2010;14(17): 1-153, iii-iv.

Meske DS, et al. Efficacy of opioids versus placebo in chronic pain: a systematic review and meta-analysis of enriched enrollment randomized withdrawal trials. *J Pain Res*. 2018;3;11:923-934.

Mezei L, Murinson BB. and Johns Hopkins Pain Development Team. Pain education in North American medical schools. *J Pain.* 2011;12(12):1199-208.

Michna E, et al. Predicting aberrant drug behavior in patients treated for chronic pain: importance of abuse history. *J Pain Symptom Manage*. 2004;28(3):250-8.

Michna E, et al. Use of prescription opioids with abuse-deterrent technology to address opioid abuse. *Cur Med Res Opin*. 2014;30(8):1589-98.

Moore RA,, et al. Single dose oral analgesics for acute postoperative pain in adults - an overview of Cochrane reviews. *Cochrane Database Syst Rev.* 2015 Sep 28;(9):CD008659

Moore TM, et al. A comparison of common screening methods for predicting aberrant drug-related behavior among patients receiving opioids for chronic pain management. *Pain Med.* 2009;10(8):1426-33.

Nagpal G, Heiman H and Haymond S. Interpretation of Urine Drug Screens: Metabolites and Impurities. *JAMA.* 2017;318(17):1704-1705.

National Institute of Mental Health. Ask Suicide-Screening Questions (ASQ) Toolkit. Retrieved from www.nimh.nih.gov/labs-at-nimh/asq-toolkit-materials

Nicolaidis C, Chianello T and Gerrity M. Development and preliminary psychometric testing of the centrality of pain scale. *Pain Med.* 2011;12(4):612-7.

Noble M, et al. Long-term opioid management for chronic noncancer pain. *Cochrane Database Syst Rev*. 2010 Jan 20;(1):CD006605

Nuckols TK et a. Opioid prescribing: a systematic review and critical appraisal of guidelines for chronic pain. *Ann Intern Med*. 2014;160(1):38-47.

Oken BS. Placebo effects: clinical aspects and neurobiology. *Brain*. 2008 Nov;131(Pt 11):2812-23.

Passik SD, et al. A new tool to assess and document pain outcomes in chronic pain patients receiving opioid therapy. *Clin Ther.* 2004;26(4):552-61.

Passik SD. Issues in long-term opioid therapy: unmet needs, risks, and solutions. *Mayo Clin Proc*. 2009;84(7), 593-601.

Patrick LE, et al. Long-term outcomes in multidisciplinary treatment of chronic low back pain: results of a 13-year follow-up. *Spine.* 2004 Apr 15;29(8):850-5.

Patrick SW, et al. Implementation Of Prescription Drug Monitoring Programs Associated With Reductions In Opioid-Related Death Rates. *Health Affairs.* 2016;35(7):1324-32.

Paulozzi LJ, et al. A history of being prescribed controlled substances and risk of drug overdose death. *Pain Med*. 2012;13(1):87-95.

Peppin JF, et al. Recommendations for urine drug monitoring as a component of opioid therapy in the treatment of chronic pain. *Pain Med*. 2012;13(7):886-96.

Pereira J, et al. Equianalgesic dose ratios for opioids. a critical review and proposals for long-term dosing. *J Pain Symptom Manage.* 2001;22(2):672-87.

Petrosky E, et al. Chronic Pain Among Suicide Decedents, 2003 to 2014: Findings From the National Violent Death Reporting System. *Ann Intern Med*. 2018;169(7):448-455.

Pezella EJ, et al. Secular trends in opioid prescribing in the USA. *J Pain Res*. 2017;10:383-387.

Pozek JP, et al. The Acute to Chronic Pain Transition: Can Chronic Pain Be Prevented? *Med Clin North Am*. 2006;100(1):17-30.

Reid MC, et al. Use of opioid medications for chronic noncancer pain syndromes in primary care. *J Gen Intern Med.* 2002;17(3):173-9.

Reisfield GM, Goldberger BA and Berholf RL. 'False-positive' and 'false-negative' test results in clinical urine drug testing. *Bioanalysis*. 2009;1:937-952.

Ren Z, et al. The impact of genetic variation on sensitivity to opioid analgesics in patients with postoperative pain: a systematic review and meta-analysis. *Pain Physician.* 2015 Mar-Apr;18(2):131-52.

Reuben DB, et al. National Institutes of Health Pathways to Prevention Workshop: The Role of Opioids in the Treatment of Chronic Pain. *Ann Intern Med*. 2015;14(2):91-121.

Roberts AH, et al. Behavioral management of chronic pain and excess disability: long-term follow-up of an outpatient program. *Clin J Pain.* 1993 Mar;9(1):41-8.

Salaffi F, Sarzi-Puttini P and Atzeni F. How to measure chronic pain: New concepts. *Best Pract Res Clin Rheumatol.* 2015;29(1):164-86.

Saunders KW, et al. Relationship of opioid use and dosage levels to fractures in older chronic pain patients. *J Gen Intern Med.* 2010;25(4):310-5.

Savage SR, et al. Definitions related to the medical use of opioids: evolution towards universal agreement. *J Pain Symptom Manage.* 2003;26(1):655-67.

Smith HS and Peppin JF. (2014). Toward a systematic approach to opioid rotation. *J Pain Res.* 2014;17;7:589-608.

Smith HS. Combination opioid analgesics.*Pain Physician*. 2008;11(2):201-14.

Smith PC, et al. A single-question screening test for drug use in primary care. *Arch Intern Med*. 2010;170(13), 1155-60.

Smith PC, et al. Primary care validation of a single-question alcohol screening test. *J Gen Intern Med*. 2009;24(7):783-8.

Smith RV, Havens J and Walsh S. Gabapentin misuse, abuse and diversion: a systematic review. *Addiction*. 2016;111(7): 1160-1174.

Sordo L, et al. Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. *BMJ*. 2017;357:j1550.

Stanos SP, Bruckenthal P and Barkin RL. Strategies to reduce the tampering and subsequent abuse of long acting opioids: potential risks and benefits of formulations with physical or pharmocological deterrents to tampering. *Mayo Clin Proc*. 2012;87(7):683-694.

Substance Abuse and Mental Health Services Administration (SAMHSA) Overdose Toolkit. Retrieved from http://store.samhsa.gov/shin/content/SMA13-4742/Toolkit_Patients.pdf)

Sun EC, Darnall B and Baker L. Incidence of and Risk Factors for Chronic Opioid Use Among Opioid-Naive Patients in the Postoperative Period. *JAMA Intern Med*. 2016;176:1286-93.

Tang NK and Crane C. Suicidality in chronic pain: a review of the prevalence, risk factors and psychological links. *Psychol Med.* 2006;36(5):575-86.

Tayeb BO, et al. Durations of Opioid, Nonopioid Drug, and Behavioral Clinical Trials for Chronic Pain: Adequate or Inadequate? *Pain Med.* 2016 Nov;17(11):2036-2046.

Townsend CO, et al. A longitudinal study of the efficacy of a comprehensive pain rehabilitation program with opioid withdrawal: comparison of treatment outcomes based on opioid use status at admission. *Pain.* 2008;140(1):177-89.

Treillet E, Laurent S and Hadjiat Y. Practical management of opioid rotation and equianalgesia. *J Pain Res.* 2018;29(11):2587-2601.

US Department of Verteran Affairs. (2019). PTSD: National Center for PTSD. Retrieved from www.ptsd.va.gov

US Food and Drug Administration. 2018. *Opioid Analgesic REMS Education Blueprint for Health Care Providers Involved in the Treatment and Monitoring of Patients with Pain*. Retrieved from: https://www.accessdata.fda.gov/drugsatfda_docs/rems/Opioid_analgesic_2018_09_18_FDA_Blueprint.pdf.

Volkow ND and McLellan T. Opioid Abuse in Chronic Pain — Misconceptions and Mitigation Strategies. *NEJM*. 2016;374(13):1253-63.

Volkow ND, Koob GF and McLellan AT. Neurobiologic Advances from the Brain Disease Model of Addiction. *NEJM*. 2016;374(4):363-71.

Voscopoulos C and Lema M. When does acute pain become chronic? *Br J Anaesth.* 2010;105(1):i69-i85.

Vowles KE, et al. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015;156(4):569-76.

Waldfogel JM et a. Pharmacotherapy for diabetic peripheral neuropathy pain and quality of life: A systematic review. *Neurology*. 2017;88(20):1958-1967.

Walk D and Poliak-Tunis M. Chronic Pain Management: An Overview of Taxonomy, Conditions Commonly Encountered, and Assessment. *Med Clin N Am*. 2016;100(1): 1-16.

Webster L. Uncritical Publication of a Biased Study Leads to Misleading Media Reports. *Pain Med*. 2019; 20: 1274–1276.

Webster LR. and Fine PG. Review and critique of opioid rotation practices and associated risks of toxicity. *Pain Med.* 2012;13(4):562-70.

Wiese AD, et al. Opioid Analgesic Use and Risk for Invasive Pneumococcal Diseases: A Nested Case–Control Study. *Ann Intern Med*. 2018;168(6):396-404.

Woolf CJ. Pain: Moving from Symptom Control toward Mechanism-Specific Pharmacologic Management. *Ann Intern Med*. 2004;140(6):441-451.

Yi P. and Pryzbylkowski P. Opioid Induced Hyperalgesia. *Pain Med.* 2015;16 Suppl 1:S32-6.

Zacny J et a. College on Problems of Drug Dependence taskforce on prescription opioid non-medical use and abuse: position statement. *Drug Alcohol Depend.* 2003;69(3):215-32.