Best Practices for Opioid Tapering

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Learning Objectives

1. Review evidence of risk for opioid misuse.
2. Describe best practices for opioid tapering.
3. List options for opioid withdrawal symptom management.

The Harsh Reality

- In the US, 1 in 7 will develop substance addiction
- Patients prescribed opioids for chronic pain:
  - 21-29% will misuse
  - 8-12% will develop an opioid-use disorder
- Mortality on the rise
  - Deaths from natural and semisynthetic opioids increased 1999-2000, plateaued 2010-2013, climbed 2013-2014
  - Deaths synthetic opioids (e.g., fentanyl, heroin) also increased dramatically

Chisholm-Burns MA, et al. AJHP. 2019;76(7):424-35.

Opioid Prescribing After Nonfatal Overdose & Repeated Overdose

- *Annals of Internal Medicine* published which noted:
  - 91% of patients experiencing a nonfatal opioid overdose continued to receive and 7% had a repeat overdose
  - Repeat overdosing increased with higher-dose opioids or concomitant use of benzodiazepines
  - 70% of patients who continued to receive opioids after the overdose obtained them from a prescriber who had treated them before the overdose

Larochelle MR, et al. Annals of Internal Medicine, 164, 1-9.

Doctors Are Poor Predictors of Abuse

- In a study of patients clinicians thought were *not* at risk for misuse of medications 60% had urine drug tests showing illicits or the prescribed drug was not found.

Bronstein, et al. Can Clinicians Accurately Predict Which Patients Are Misusing Their Medications? American Pain Society – 30th Annual Scientific Meeting Poster 111, Presented May 19, 2011

Who Is At Greatest Risk?

- **Opioid naïve**
  - < 30 days of use
- **White, non-urban, young adult and middle-aged Americans**
- **Socioeconomic status**
  - Didn't graduate high school
  - Lack health insurance or use Medicaid
  - Disabled from work
- **Geographic role**
  - South census region
  - 5 states with highest opioid mortality (2016): West Virginia, New Hampshire, Ohio, Maryland, Massachusetts

Unick GJ, Ciccarone D. Int J Drug Policy. 2017;46:112-9.

Problematic Opioid Use

- Systematic review from 38 studies (26% primary care settings, 53% pain clinics)

Misuse rates: **21% - 29%**

Misuse: Opioid use contrary to the directed or prescribed pattern of use, regardless of the presence or absence of harm or adverse effects.

Addiction rates: **8% - 12%**

Addiction: Pattern of continued use with experience of, or demonstrated potential for, harm (eg, "impaired control over drug use, compulsive use, continued use despite harm, and craving").

Vowles KE et al. *Pain*. 2015

Slide credit: Daniel Alford, MD, MPH
ACP Annual Meeting 2019

Misuse: the new opioid use disorder

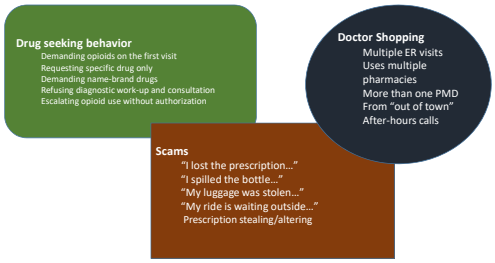
- 21-29% of patients misuse their medications
- US-specific factors:
  - Higher doses of opioids per patient
  - Lesser regulatory restrictions
  - Pro-profit orientation

Just JM, et al. BMC Fam Prac. 2018;19:92.
Vowles KE, et al. Pain. 2015;156(4):569.

Recognizing Opioid Misuse

- **Use inconsistent with how it was prescribed**
  - Higher dose
  - Increased frequency
  - Different route of administration
  - Different indication
  - Using another person's medication
  - Selling, trading, or sharing (i.e., diversion)

Recognizing Opioid Misuse



Duration of Use is Strong Predictor of Misuse

- Retrospective database study of 1+ million patients
  - No history of opioid misuse or ongoing opioid use
  - 56% received post-op opioids
    - 0.6% ultimately misused them (opioid dependence, abuse, overdose)
  - Each prescription refill = 44% increase in rate of misuse
  - Each additional week of opioid use = 20% increase in risk of misuse

Brat GA, et al. BMJ. 2018;360:j5790.

Don't Believe Me?

- Insurance database of 36,000+ claims for shoulder surgery
  - Minor surgery (e.g., shave bone spur) – 5.9% continued use
  - Major surgery (e.g., total replacement) – 6.5% continued use
  - Vs. 0.4% in control group
- Risk factors identified:
  - Presence of preoperative pain
  - Medical comorbidities
  - Depression
  - History of drug, alcohol, or tobacco use
  - Lower socioeconomic status
  - Use of benzodiazepines or antidepressants pre-surgery

Brummett CM, et al. JAMA Surg. 2017;152:e170504.

Surgical Impact

- Anatomic location and surgery type impact degree of expected post-op pain[1]
- Opioid requirement prior to discharge after inpatient surgery may predict post-discharge requirements[2]
  - 333 abdominal surgery patients with post-op admission
  - Strongest predictor of post-discharge opioid use was amount used day prior to discharge
    - Patients using zero = 1.5 tabs after discharge
    - Patients using 1 – 3 tabs = 7.6 tabs after discharge
    - Patients >4 tabs = 21.2 tabs after discharge

1. Kim N, et al. J Bone Joint Surg Am. 2016;98:e89.
2. Hill MV, et al. J Am Coll Surg. 2018;226:996.

Excessive Prescriptions

- 2300+ surgical patients[1]
  - Mean number of opioid prescribed post-op = #30 (H/A, 5/325mg)
  - Median use = #9 tabs
- 250 upper extremity surgery patients[2]
  - Most received prescription for #30 opioids
  - 77% took half or less of prescribed tablets
  - 45% took less than five tablets
  - Total # of unused tablets = 4,639

1. Howard R, et al. JAMA Surg2018; :e184234.
2. Rodgers J, et al. J Hand Surg Am. 2012;37:645.

Level-Up On The Pain

- 642 opioid naïve patients
- Number necessary to supply opioid needs of 80% of patients, in 5mg oxycodone equivalency:
  - Partial mastectomy: 5
  - Partial mastectomy with sentinel lymph node biopsy: 10
  - Laparoscopic cholecystectomy: 15
  - Laparoscopic inguinal hernia repair: 15
  - Open inguinal hernia repair: 15
- Zero opioid needs:
  - 22% of open inguinal hernia repair
  - 82% of partial mastectomy

Hill MV, et al. Ann Surg 2017;265:709.
https://medium.com/ Accessed: Oct 30, 2019

Center for Opioid Research and Education

Surgical Opioid Guidelines

We convened a multidisciplinary consortium of physicians, nurses, pharmacists, and patients to develop ideal opioid prescribing patterns after common medical procedures utilizing a modified Delphi approach. Best prescribing practices are listed for post-surgical narcotic naïve patients at discharge.

Procedure	Start with this*	If needed, maximum Oxycodone 5 mg pills recommended
Laparoscopic cholecystectomy	Acetaminophen and/or Ibuprofen	10 Tablets
Laparoscopic inguinal hernia repair, unilateral	Acetaminophen and/or Ibuprofen	12 Tablets
Open inguinal hernia repair, unilateral	Acetaminophen and/or Ibuprofen	10 Tablets
Open umbilical hernia repair	Acetaminophen and/or Ibuprofen	14 Tablets
Arthroscopic partial meniscectomy	Acetaminophen and/or Ibuprofen	8 Tablets
Arthroscopic ACL or PCL repair	Acetaminophen and/or Ibuprofen	20 Tablets
Arthroscopic rotator cuff repair	Acetaminophen and/or Ibuprofen	20 Tablets
ORIF of the Ankle	Acetaminophen and/or Ibuprofen	20 Tablets
Hysterectomy, Open	Acetaminophen and/or Ibuprofen	15 Tablets
Hysterectomy, Minimally-Invasive	Acetaminophen and/or Ibuprofen	10 Tablets
Uncomplicated Cesarean section	Acetaminophen and/or Ibuprofen	10 Tablets
Uncomplicated labor and delivery	Acetaminophen and/or Ibuprofen	5 Tablets

Center for Opioid Research and Education

Dental Opioid Guidelines

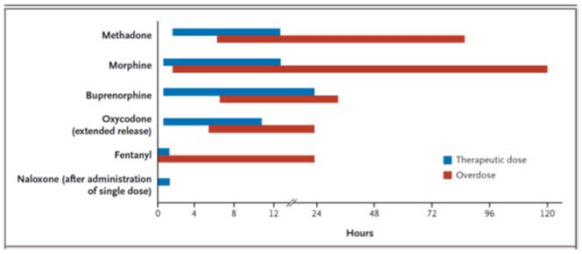
We convened a multidisciplinary consortium of dentists, periodontists, oral and maxillofacial surgeons, endodontists, and patients to develop ideal opioid prescribing patterns after common dental procedures utilizing a modified Delphi approach. Best prescribing practices are listed for post-operative narcotic naïve patients at discharge.

Procedure	Start with this*	If needed, maximum Oxycodone 5 mg pills recommended
Routine Tooth Extractions	Acetaminophen and/or Ibuprofen (NSAIDs)	0
Extractions of impacted teeth including 3rd molars	Acetaminophen and/or Ibuprofen (NSAIDs)	15
Surgical extractions	Acetaminophen and/or Ibuprofen (NSAIDs)	12
Alveoloplasty	Acetaminophen and/or Ibuprofen (NSAIDs)	12
Bone grafting procedures	Acetaminophen and/or Ibuprofen (NSAIDs)	12
Soft tissue procedures	Acetaminophen and/or Ibuprofen (NSAIDs)	0
Gingivectomy	Acetaminophen and/or Ibuprofen (NSAIDs)	0

Patient Education & Instruction

1) Expectation for pain relief
2) Risks of opioid therapy
3) How to take medication
4) Safe storage and disposal
5) Written information

Onset and Duration of Action



Boyer EW. NEJM. 2012;367:146-55.

When to Discontinue

- Addiction (to opioids or other substance)
- Adverse effects
  - Serious adverse events: overdose, falls, MVA/DUI, suicide attempt
  - Adverse effects not responsive to dose lowering: urinary retention, sedation, hyperalgesia
- Failure to meet treatment goals
  - No significant improvement for risk
- Diversion

FDA identifies harm reported from sudden discontinuation of opioid pain medicines and requires label changes to guide prescribers on gradual, individualized tapering

FDA Drug Safety Communication

Safety Announcement

[4-9-2019] The U.S. Food and Drug Administration (FDA) has received reports of serious harm in patients who are physically dependent on opioid pain medicines suddenly having these medicines discontinued or the dose rapidly decreased. These include serious withdrawal symptoms, uncontrolled pain, psychological distress, and suicide.

Example Tapers for Opioids

Slowest Taper (over years)	Slower Taper (over months or years)	Faster Taper (over weeks)****	Rapid Taper (over days)****
Reduce by 2-10% q4-8 weeks with pauses in taper as needed Consider for patients taking doses >90 MEDD of long-acting opioids† for 1+ yrs	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

MEDD= morphine equivalent daily dose (for assistance calculating MEDD→ https://www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf

***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.**
†Long acting opioids= methadone, oxymorphone, sustained-release morphine, sustained-release oxycodone, tramadol ER, transdermal fentanyl, others

Example Tapers for Opioids

Slowest Taper (over years)	Slower Taper (over months or years)	Faster Taper (over weeks)****	Rapid Taper (over days)****
	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 qBh = 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 qBh (60 mg+15 mg) 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 qBh 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 QBh**	Ex: morphine SR 90 mg qBh = 270 MEDD Month 1: 75 mg SR qBh (60 mg+15 mg) [16% reduction] Month 2: 60 mg SR qBh Month 3: 45 mg SR qBh Month 4: 30 mg SR qBh Month 5: 15 mg SR qBh Month 6: 15 mg SR q12h Month 7: 15mg SR qHS, then stop***	Ex: morphine SR 90 mg qBh = 270 MEDD Week 1: 75 mg SR QBh [16% reduction] Week 2: 60 mg SR qBh (15 mg x 4) Week 3: 45 mg SR qBh (15 mg x 3) Week 4: 30 mg SR qBh (15 mg x 2) Week 5: 15 mg SR qBh Week 6: 15 mg SR q12h Week 7: 15 mg SR qHS x 7 days, then stop***	Ex: morphine SR 90 mg qBh = 270 MEDD Day 1: 60 mg SR qBh (15 mg x 4) [33% reduction] Day 2: 45 mg SR qBh (15 mg x 3) Day 3: 30 mg SR qBh (15 mg x 2) Day 4: 15 mg SR qBh Days 5-7: 15 mg SR q12h Days 8-11: 15 mg SR qHS, then stop***

Case Scenario: Mr. Martinez

53 year-old male who underwent hernia repair 2 years ago and unfortunately suffers from chronic nerve pain in his abdomen from the surgical mesh. Surgical revision did not relieve his pain.

- Pain medications include gabapentin 300 mg by mouth three times daily, morphine controlled-release 30 mg by mouth twice daily and morphine 15 mg by mouth every 12 hours (total 90 mg/day)
- Morphine is no longer helping and he is severely constipated which worsens his pain. Gabapentin is maybe helping but he did not tolerate higher doses (felt "out of it")

Case Scenario: Mr. Martinez (cont.)

- His anxiety level has been high and he is angry and sad about his surgical outcome and struggles with daily functioning. He had to retire early because he could no longer sit at his desk job or concentrate. He sleeps poorly. His life has changed drastically since before the surgery.
- He asks you for help with:
  - Weaning morphine and what to do with the leftover medication

Opioid Tapering

- Tapering plans should be individualized and should minimize symptoms of opioid withdrawal, while maximizing pain treatment with nonpharmacologic medications
- ***Go slowly!***
  - A decrease of **10% of the original dose per week** is a reasonable starting point
  - Some patients who have taken opioids chronically for years may need even slower tapers (e.g., 10% per month)
- *Consider risk factors when tapering (e.g., unstable heart disease, pregnancy)*
  - *Monitor for behavioral changes, behaviors concerning for SUD*
    - *Provide encouragement and support*

https://www.cdc.gov/drugoverdose/pdf/clinical_pocket_guide_tapering-a.pdf

Example Taper

Current regimen:

Morphine CR 30mg po q12h

Morphine IR 15mg po q12h PRN (up to 90MME)

- **Week 1:**
  - Morphine controlled-release: 30 mg PO in the morning and 15 mg at bedtime
  - Morphine immediate-release: 15 mg PO every 12 hours
- **Week 2:**
  - Morphine-controlled release: 15 mg PO twice daily
  - Morphine immediate-release: 15 mg PO every 12 hours
- **Week 3:**
  - Morphine controlled-release: 15 mg PO in the morning
  - Morphine immediate-release: 15 mg PO every 12 hours
- **Week 4:**
  - Morphine immediate-release: 15 mg PO once daily

Another Patient Taper…

Current regimen
Oxycodone ER 30mg PO TID
Oxycodone IR 15mg PO q6h PRN

- Month 1
  Oxycodone ER 30mg PO qAM
  Oxycodone ER 20mg PO midday
  Oxycodone ER 30mg PO qPM
  Oxycodone IR 15mg PO q6h PRN
- Month 2
  Oxycodone ER 30mg PO qAM
  Oxycodone ER 20mg PO qMidday
  Oxycodone ER 20mg PO qPM
  Oxycodone IR 15mg PO q6h PRN
- Month 3
  Oxycodone ER 20mg PO qAM
  Oxycodone ER 20mg PO qMidday
  Oxycodone ER 20mg PO qPM
  Oxycodone IR 10mg PO q6h PRN
- Month 4
  Oxycodone ER 20mg PO qAM
  Oxycodone ER 15mg PO qMidday
  Oxycodone ER 20mg PO qPM
  Oxycodone IR 10mg PO q6h PRN
- Month 5
  Oxycodone ER 20mg PO qAM
  Oxycodone ER 15mg PO qMidday
  Oxycodone ER 15mg PO qPM
  Oxycodone IR 10mg PO q6h PRN
- Month 6
  Oxycodone ER 15mg PO qAM
  Oxycodone ER 15mg PO qMidday
  Oxycodone ER 15mg PO qPM
  Oxycodone IR 10mg PO q6h PRN
- Month 7
  Oxycodone ER 15mg PO qAM
  Oxycodone ER 10mg PO qMidday
  Oxycodone ER 15mg PO qPM
  Oxycodone ER 10mg PO q8h PRN
- Month 8
  Oxycodone ER 15mg PO qAM
  Oxycodone ER 10mg PO qMidday
  Oxycodone ER 10mg PO qPM
  Oxycodone ER 10mg PO q8h PRN
- Month 9
  Oxycodone ER 10mg PO qAM
  Oxycodone ER 10mg PO qMidday
  Oxycodone ER 10mg PO qPM
  Oxycodone IR 5mg PO q8h PRN
- Month 10
  Oxycodone 10mg PO BID
  Oxycodone IR 5mg PO q8h PRN
- Month 11
  Oxycodone 10mg PO qAM
  Oxycodone IR 5mg PO q8-12h PRN
- Month 12
  Oxycodone IR 5mg PO q8h PRN (vs. discontinue depending on prior PRN use)
- Month 13
  Oxycodone IR 5mg PO q12h PRN (vs. discontinue depending on prior PRN use)
- Month 14
  Oxycodone IR 5mg PO qAM PRN (vs. discontinue depending on prior PRN use)

Who Should Get Naloxone?

- High-risk patients who:
- Received emergency care for opioid intoxication or overdose
- Have suspected substance abuse or nonmedical opioid use
- Are taking >100mg morphine equivalents/day
- Are receiving an opioid prescription for pain PLUS:
  - A prescription for buprenorphine or methadone
  - A history of poorly controlled respiratory disease or infection
  - A history of renal dysfunction, hepatic disease, or cardiac comorbidities
  - Known or excessive alcohol use or dependency
  - Concurrent use of benzodiazepines, antihistamines, muscle relaxants, barbiturates, or alcohol
  - Suspected poorly controlled depression

Who Should Get Naloxone?

- Are taking opioids but have unreliable access to emergency medical services
- Have been recently incarcerated/released from prison
- Have resumed opioid use after a period of abstinence
- Any patient or family requesting naloxone kit

Withdrawal Symptom Management

Early Symptoms (hours to days)	Late Symptoms (days to weeks)	Prolonged Symptoms (weeks to months)
• Anxiety/restlessness • Rapid short respirations • Runny nose, tearing eyes, sweating • Insomnia • Dilated reactive pupils	• Runny nose, tearing eyes • Rapid breathing, yawning • Tremor, diffuse muscle spasms/aches • Piloerection • Nausea, vomiting, and diarrhea • Abdominal pain • Fever, chills • Increased white blood cells If sudden withdrawal	• Irritability, fatigue • Bradycardia • Decreased body temperature • Craving • Insomnia

Adjuvant Meds for Symptom Reduction

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) o *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* o *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 o *Re-evaluate in 3 to 7 days; average duration 15 days* o *May continue after acute withdrawal to help decrease cravings* o *Should be tapered when it is discontinued* o *Dose adjustment in renal impairment:* ▪ *CrCl 50-80 mL/min: initial: 5 mg q12h* ▪ *CrCl 30-<50 mL/min: initial: 2.5 mg q8h* ▪ *CrCl <30 mL/min (not on HD): initial: 2.5 mg q12h* ▪ *ESRD on HD: avoid use*

Adjuvant Meds for Symptom Reduction

Indication	Treatment Options
Autonomic symptoms *(sweating, tachycardia, myoclonus)*	**Alternatives** • Gabapentin start at 100 to 300 mg and titrate to 1800 to 2100 mg divided in 2 to 3 daily doses o *Can help reduce withdrawal symptoms and help with pain, anxiety, and sleep* o *Dose adjustment in renal impairment:* ▪ *CrCl ≥60 mL/min: 300-1200 mg TID* ▪ *CrCl 30-59 mL/min: 200-700 mg BID* ▪ *CrCl 15-29mL/min: 200-700 mg once daily* ▪ *CrCl <15 mL/min: reduce daily dose in proportion to CrCl based on dose for CrCl of 15 mL/minute (eg, reduce dose by one-half [range: 50 to 150 mg/day] for CrCl 7.5 mL/minute)* • Tizanidine 4 mg three times daily, can increase to 8 mg three times daily o *Dose adjustment in renal impairment and geriatrics:* ▪ *CrCl <25 mL/min: use with caution*
Anxiety, dysphoria, lacrimation, rhinorrhea	• Hydroxyzine 25 to 50 mg three times a day as needed** o *Dose adjustment in renal impairment:* ▪ *GFR ≤50 mL/min: administer 50% of the dose* • Diphenhydramine 25 mg every 6 hours as needed**

Adjuvant Meds for Symptom Reduction

Indication	Treatment Options
Myalgias	• NSAIDs (e.g., naproxen 375 to 500 mg twice daily or ibuprofen 400 to 600 mg four times daily)*** o *Caution in geriatric patients; consider using a reduced dose* o *KDIGO 2012 guidelines for renal dose adjustment:* ▪ *eGFR 30 to <60 mL/minute/1.73 m2: Avoid use in patients with intercurrent disease that increases risk of acute kidney injury* ▪ *eGFR <30 mL/minute/1.73 m2: Avoid use* • Acetaminophen 650 mg every 6 hours as needed o Dose adjustment in renal impairment: ▪ eGFR ▪ CrCl 30-59 mL/min: 200-700 mg BID ▪ CrCl 15-29mL/min: 200-700 mg once daily ▪ CrCl <15 mL/min: reduce daily dose in proportion to CrCl based on dose for CrCl of 15 mL/minute (eg, reduce dose by one-half [range: 50 to 150 mg/day] for CrCl 7.5 mL/minute) • Topical medications like menthol/methylsalicylate cream, lidocaine cream/ointment

Adjuvant Meds for Symptom Reduction

Indication	Treatment Options
Sleep disturbance	• Trazodone 25 to 300 mg orally
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	Ensure all opioid related stool softeners/senna has been discontinued • 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
Notes: ***caution/avoid in patients > 65 years old; ***caution in patients with risk of GI bleed, renal compromise, cardiac disease*	

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